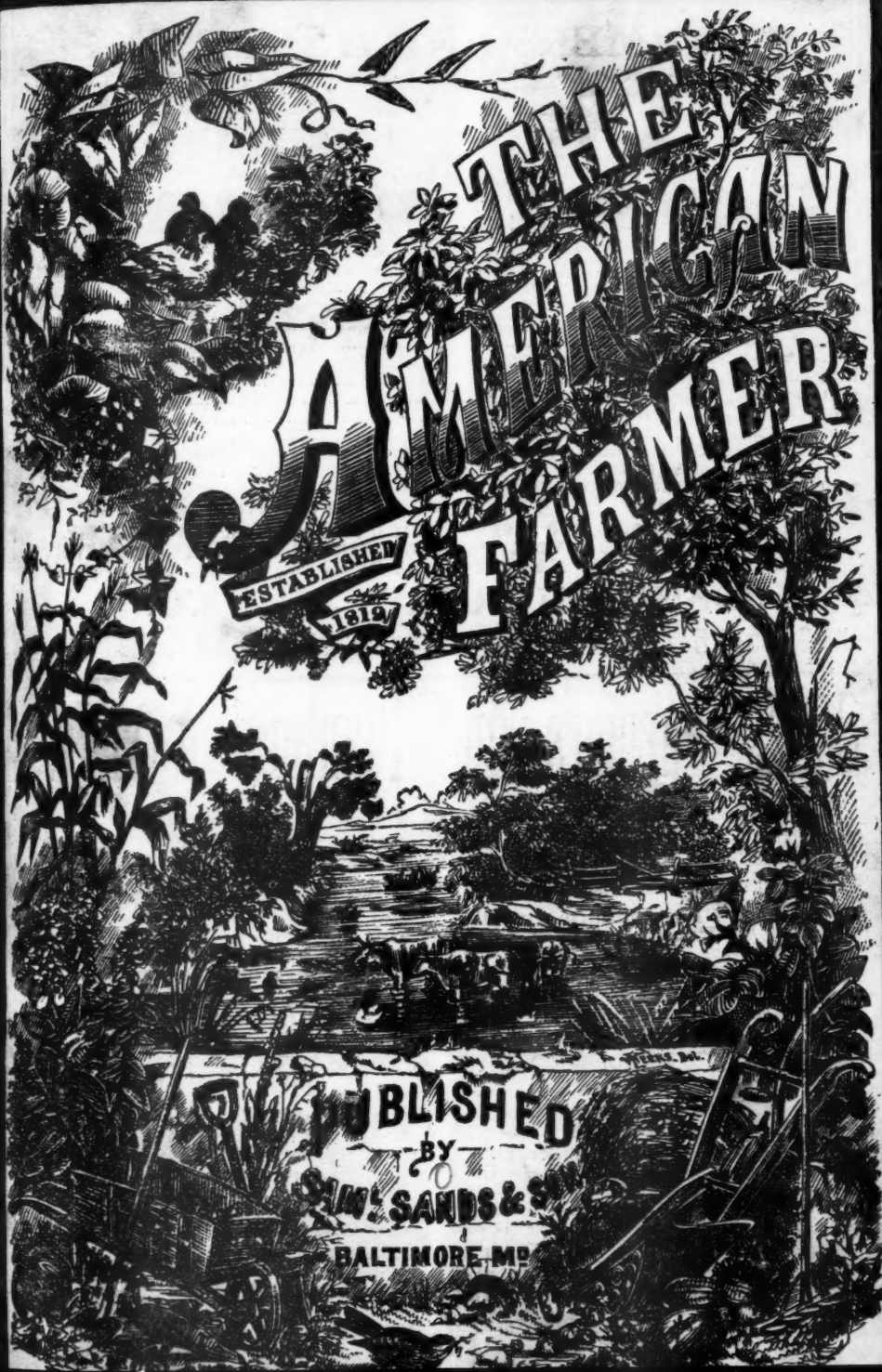


JANUARY, 1876.



THE AMERICAN FARMER

ESTABLISHED
1819

PUBLISHED
by

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BALTIMORE, MD.

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The First Manufacturer in America that sold **GROUND BONES** by **WEIGHT**.

PURE BONE DUST AND

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CHEMICAL LABORATORY OF P. B. WILSON, No. 32 SECOND STREET, BALTIMORE, July 30, 1878.

Joshua Horner, Jr.—Dear Sir: The following is the result of analysis of a sample of your Bone Dust drawn by myself from a lot of seven tons lying in your warehouse:

Moisture, (deter. at 212° F.).....	3.74 per cent.
Organic Matter.....	40.12 per cent.
Containing—Nitrogen, 4.68; Ammonia 4.95.	
Inorganic Matter	56.14 per cent.
Containing Phosphoric Acid.....	24.52 per cent.
Containing Bone Phosphate of Lime.....	53.52 per cent.
Insoluble Matter.....	2.51 per cent.

This is the **BEST SAMPLE OF BONE DUST** I CAN FIND IN THE MARKET, and call your especial attention to the **LARGE PERCENTAGES OF VALUABLE MATERIAL** for the improvement of the soil, and to the **SMALL PERCENTAGES** of moisture and insoluble matter

Respectfully, etc.,

P. B. WILSON, *Analytical and Consulting Chemist.*

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All Kinds of Fertilizers, &c.

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Portable Steam Engines and Boilers,

Saw and Grist Mills, &c.,

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Likewise

FRUIT AND ORNAMENTAL TREES, SHRUBS AND PLANTS; FIELD, GARDEN AND FLOWER SEEDS.

ALL KINDS OF FARM SUPPLIES.

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IMPROVED LIVE STOCK,

CATTLE, HORSES, SHEEP, SWINE and POULTRY. In this Department we buy only from breeders of established reputation of the several kinds, and cannot undertake to procure ordinary farm stock, such as draft horses, milch cows, &c. In this vicinity great attention is paid to some particular breeds of stock, and specimens can be had here which are nowhere to be surpassed.

As in all transactions we operate for the purchaser, our terms must necessarily be

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EDITORS AND PUBLISHERS AMERICAN FARMER,

No. 9 North St. Baltimore, Md.

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THE AMERICAN FARMER.

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"AGRICOLAS." Virg.

PUBLISHED BY SAML. SANDS & SON, BALTIMORE, MD.

VOL. V.—No. 1.]

JANUARY, 1876.

[NEW SERIES.]

Beginning of the New Volume.

With the recurrence of the opening of a new year and a new volume, we greet the friends and readers of *The American Farmer* with cordial wishes for their health and prosperity. We hope all have reasonable grounds for felicitation upon adequate returns for capital and time engaged, and that not only have substantial rewards been secured for their patience and labors, but that profitable experiences have been accumulated and fresh encouragement gained for continued and enlarged operations in the same fields.

The farming class, as a rule, have probably less ground of complaint than many others at the financial condition of the country.

Seasons have been fruitful; prices generally not depressed below a fair average of profit; and the outlook is not discouraging for improvement in the future. The actual distress which the pinching season of winter brings to the cities is absolutely unknown to the farmers; and their products, for which the demand is ever inevitable and unremitting, always find a market and bring a price not out of proportion to those for which they must be exchanged.

We are now passing through an epoch of transition, after which smaller profits than have been received, may be expected; the cost of production requires to be lessened by improved methods and perfected appliances, and a rigid scrutiny maintained over the economy of the

farm and the household. With these demands many of our readers are not unfamiliar, and it becomes all to conform their wants and habits to such changes as the condition of the times make imperative.

Above, and beyond all this, however, agriculturally considered, is demanded *better farming*; a larger production on less areas and at a diminished cost. This attained, and it will prove the keystone of the arch of restored prosperity which will be raised, at no distant day, symmetrical, perfect and enduring.

Towards reaching this end *The American Farmer* will do its part, and however modest its efforts, they will be made with an eye single to the advancement of the cause of agriculture all around it; and it may be added, without vanity, that with the light its pages afford, illumined by so many pens devoted to the promotion of agricultural improvement, it will at least not fail of accomplishing its fair share of the work to be done.

To our correspondents who have enriched its pages with the fruits of their experience and observation; to the friends who have zealously worked to extend its circulation and widen its influence; to its readers, than whom no journal ever had more appreciative and attentive ones, we return our merited thanks for the favors of the past, and extend our request for their continuance in the future; and to all our old friends, as well as to the many new ones, who we hope will read these lines, we wish peace, health, prosperity, and *A Happy New Year.*

393098

Raising Cheap Cotton.

A Necessity of Southern Agriculture— How to be Accomplished.

The following practical and well-founded views are presented by the *Southern Cultivator*:

With the close of another year, let us take a retrospective view and see what useful lessons may be learned. The plainest, most obvious fact in its history is, that again too much cotton has been planted. It is very patent to every one that, under existing circumstances, the demand for cotton is not sufficient to establish remunerative prices. The causes of this we will not now stop to discuss at length. It is partly due, no doubt, to financial disturbances and general business stagnation. But this is not all.—We must never forget that the short supply of cotton and consequent high prices during the late war, stimulated the production of cotton in other countries to a remarkable degree, and that since the war the supply from these has been some *two millions bales* greater than it was previously. Most of the cotton from these sources is of inferior grade it is true, but not all. We saw, at the late Georgia State Fair, samples of South American cotton, exhibited by Mr. Lawton, Agent of the Direct Trade Co., which were fully equal to our Uplands.—But, aside from this, foreign machinery was changed during the war to consume a *large admixture* of inferior cottons. It is still in this condition, and foreign spinners are, in consequence, much more independent of large supplies of American cotton than they were before the war. It may be very safely assumed, therefore, that the day for *high-priced* cotton has passed.

What then—must the cultivation of cotton be abandoned? Yes—unless it can be raised more cheaply. Is this possible? To some extent, we think it is—but not without radical changes in the general practices of the country. The labor employed to raise a bale of cotton *must be decreased*; the provisions consumed to make it must be *home-raised*; and the capital used to make it must not be *borrowed*; if a reasonable profit is to be made from cotton culture.

How can a bale of cotton be made with less labor? By proper rotation of crops, better preparation of land, and the substitution of manure for labor. First, rotation of crops. This must be arranged to keep the land planted in cotton *filled with vegetable matter*. This is indispensable to enable the plant to retain its fruit during summer droughts. Deep breaking and thorough pulverization are also essential precautions against disastrous shedding.

SUBSTITUTION OF LABOR FOR MANURE.

With the two points alluded to above secured, this substitution may be made to an almost unlimited degree, but not otherwise. A large part of the failures, heretofore experienced from the use of commercial fertilizers, turns upon this very point. They will not pay if applied freely on land destitute of humus and shallow broken.—But the reverse is vastly truer than most of us ever conceived. Why can market gardeners apply with profit 1,000 or more pounds of guano per acre? Their crops are not burnt up by it,

and neither would a cotton crop be, with double or treble the quantity usually applied to it, if the land upon which it grows is a deep humus-abounding soil like the garden. We know perfectly well that a large portion of our lands is very far removed from this condition—and that it is beyond the means or power of our readers to adopt *garden culture at once*, upon a large scale. But upon every farm the "best spots" will admit of it more or less, and upon these thus treated, the stress of our farming for the present should be laid. One such acre properly prepared and fertilized, can be made to yield as much as three or more of ordinary land cultivated in the ordinary manner, and at no greater cost—ultimately with decidedly *less expense*. Our own experience indicates that the human labor necessary to prepare and cultivate an acre of cotton costs not less than *six dollars*. Let eight dollars worth of labor then be put on *one acre*, (\$2 for additional deep-breaking), and *ten dollars* spent upon it as manure—instead of eighteen dollars for labor upon *three acres*—and the advantage will always be on the side of the one acre. For, estimating the yield as equal only, the "one acre" will steadily and rapidly *improve*—the "three acres" will as steadily and rapidly deteriorate. But this is not all. Certainly not more than half as much mule power, or ploughs, will be required to cultivate the "one" acre, as compared with the "three." Even in the picking, the advantage will be on the same side—the better the cotton, the thicker it will open, and the easier it can be picked.—The staple will also be better, and bring a higher price. Why are "Orleans" quoted higher than ordinary "upland?" Simply because the former grow upon the *rich alluvial* soils of the West. The richer the land the better always is the staple. But we have not yet mentioned all the advantages of our proposed intensive system. Less land devoted to cotton liberates more acres for provision crops, and home-made provisions always make cheaper-raised cotton. This brings us to the second point in our programme for making cheap cotton.

HOME-RAISED PROVISIONS.

At this time few fail to see the utter folly and ruin of the policy of raising cotton to buy the provisions needed on the farm. In this matter a most healthy reaction has set in, and "how to make the farm self-sustaining," is a leading topic of discussion among our farmers. Through what *special* crops it is to be accomplished for different localities and soils, is not yet finally settled, but that it *must be done* all are agreed. In general terms, we may say the solution lies in the growth of crops requiring little labor for their cultivation, and which are susceptible of being harvested largely with machinery in place of human labor. Of this character are the small grains, oats, rye and wheat—peas, clover, millet, and the grasses. Does any thinking man doubt, that by cultivating such crops, a farmer could feed his mules at *half* the cost required when they are fed on western corn and hay? If the latter are bought *on time*, as most of it has been of late, could he not feed his animals at *one-third* the cost? If so, then one-half to two-thirds the amount required, under the regime of the last ten years, to feed farm stock, may be

passed over to the account for diminishing the expense of raising cotton.

Last, but not least, as a means of securing cheap cotton, is the abandonment of its cultivation with borrowed capital—borrowed at rates varying from 15 to 50 per cent. It is one of those curious anomalies every now and then encountered, that whilst Southern farmers, since the war, have been especially lacking in *capital*, they have pursued a system of farming which, perhaps more than any other, called for the largest amount of it. Cotton culture requires more labor, more mules, more ploughs, and more expensive machinery (as gins and screws) than the growing of corn, oats, wheat, peas, clover and grasses, and of course these cannot be had without capital or ruinous credit. And yet, the southern farmer, destitute of capital, has been persistently cultivating cotton to buy these other crops. The consequences have been: great demand for labor, and consequent demoralization of the laborer—a glutting of the cotton market, and consequent low price—a scarcity of provisions with consequent high prices—a ruinous extension of credit—with liens, mortgages and all their attendant train of evils. Fatal policy! Under it, of necessity, the cost of cotton production must be great and low prices must be ruinous. It is the *cost of production*, as compared with the selling price, that determines loss or profit—if the price was no more than 10 cents, still, if the cost was only 5 cents per pound, the profit would be a handsome one.

As it appears to us, the only hope of the cotton raiser is in diminishing its cost—he cannot force it up to high prices. We have indicated what appear to be the plain, practicable means of doing this, and, in conclusion, will briefly recapitulate, reversing the order of discussion. If a farmer has small means, let him be content to operate on a small scale—cultivating such crops as require small outlay—making cotton strictly a surplus crop—raising provisions of all kinds, and, if practicable, meat also—raising mules, horses, and other stock, adapted to his circumstances—planting his best lands, and manuring these as highly as prudence will justify, substituting fertilizers for labor whenever it can be safely done.

Address to the Patrons of the South.

In our November issue we reproduced an address to the Patrons of the North from Mr. Jacques, of South Carolina, and we now give its counterpart, by the same gentleman, to the South:

TO THE PATRONS OF HUSBANDRY OF THE SOUTH.

In a previous number, we addressed ourselves to the Patrons of the North, setting forth some of the advantages of the South as a farming country and a field for immigration, and assuring those who might come here to settle and aid in building up our waste places, of a hearty welcome from their brothers of the Order among whom they might establish themselves. We now desire to say a few words to our Southern Granges, bearing on the same subject.

We have had Immigration Conventions and Immigration Societies enough, but little has

been done by them beyond the passing of sundry excellent "resolutions." We have no further need of such conventions and societies. Our State, County, and Subordinate Granges, can do all that any organization can do, much more easily and effectually.

What those who are looking longingly toward the South, as a home and a field for the exercise of their talents and industry, most want, is trustworthy information in regard to our soil, climate, crops, railways, rivers, means of transportation, markets, schools, churches, &c.; and especially of the disposition and feelings of our people toward settlers. Such information our Granges can give; and, coming from them, bound by sacred obligations and fraternal ties, it would be authoritative, with all members of the Order at least, everywhere.

If our State Granges find it inexpedient to take active measures in this matter, let the initiative be taken by Pomona Granges, county Councils, and other associations of Granges, or by single Granges, where co-operation is impracticable. Appoint a committee to set forth fairly and truly, in the form of a circular, the advantages of your county, parish or neighborhood, and the inducements you can offer to settlers; print it and circulate by thousands among the Granges of the North. We have cases in mind, in which a small pamphlet descriptive of attractive localities has been published by Subordinate Granges, and widely circulated with large practical results. Such work must tell. It is the one thing that is needed.

One word more. Offer liberal inducements to settlers. Deal generously with them when they come among you. Do not ask two prices for your land, just as soon as you find somebody willing to buy. It would pay even to give actual settlers small tracts, for the sake of the enhanced value their improvements would give to the adjoining property.

Now is the time to take hold of this work. With enterprise, energy and perseverance, it will succeed.

D. H. JACQUES,

Deputy of the State Grange of South Carolina.

Farm Schools in Europe.

Prof. Kedzie, of the Kansas Agricultural College,—itself a live institution,—has been visiting some of these, and from his report to the State Board of Agriculture we give the following extracts:

One of the first of these institutions which I visited was the Agricultural Academy of Poppledorf, near the university of Bonn, and under the able direction of Dr. Dunkleberg. I was here placed under special obligations to the courtesy of Prof. Gieseler, who spent an entire day with me in the examination of the various departments of the Academy. This institution has now been established some twenty-five years, and is well supplied with buildings and apparatus. Its chemical laboratories, three in number, are arranged with great convenience for the special examination of farm products, manures, etc. The museums of commercial manures and of food products are exceedingly fine and complete. Connected with the Academy is a fine

farm divided into two portions, one of which is devoted to pure experiment,—that is, the use of manures and the growth of crops without reference to cost, for the determination of chemical principles; the other portion is the experimental farm proper, in which the question of profit and loss is most carefully considered, both in the application of manures and in the crops produced therefrom. Much attention is here given to the best methods in the growth of the cereals. A field was pointed out to me which for twenty successive years had been sown to wheat without manure; on one portion, broadcast by hand; upon the other sown by drill; the difference in favor of the latter was very striking. I was also shown a field of rye which, during the preceding season, had been cut three times for green fodder, then wintered over, and when I saw it, was heading out and promising to produce a heavy yield of grain. The plan was strongly recommended by the farm superintendent. The farm is all very well stocked, their favorite breed of cattle being a cross between the Holstein, or Dutch cattle, and the Short-horns. This cross produces large, fine animals, remarkable as milk producers both for quantity and quality. The botanist of the Academy—Dr. Kornicke—also exhibited to me his collections of seeds and grain products, without doubt the most complete and extensive in Europe.

The Agricultural Academy of Hohenheim has, until recently, ranked highest among similar institutions in Germany. It is now probably equalled in every respect by that of Halle, which I next visited. I was particularly indebted to the courtesies of Prof. Wust, who very affably exhibited to me the full working of the Academy. Its general plan and design is, of course, very similar to the Academy of Popplesdorf, though it is in some respects conducted upon a more extensive scale. Upon the grounds of the Academy is a small but well-fitted agricultural laboratory, under the special direction of the agricultural society of the province, which will illustrate very fully the work commonly performed by the laboratories of these experiment stations. It controls the entire manufacture and sale of all commercial manures within its province. Dealers are compelled to forward to this laboratory fair samples of all their manures; these are analyzed and the price graded accordingly. The director of the laboratory has power at any time to send an assistant to the factory to collect such samples as he chooses, and the manufacturer is bound to abide the result of the analyses. Thus all frauds and adulterations, so frequently perpetrated by these manufacturers in this country, are wholly avoided. In the same manner all samples of wool produced in the province are examined in this laboratory; the amount of water contained estimated, as well as the waste resulting from washing and cleaning, and both buyers and sellers make their bargains upon the results obtained by the chemist. All fraud and loss to either party is thus entirely prevented. The general laboratory of the Academy is exceedingly large and well regulated, the work of its students being principally directed to the examination of farm soils. Connected therewith is also a microscopic laboratory for the investigation of fungoid diseases frequently investing farm

crops. The farm in connection with the Academy is wholly experimental, and exceedingly well handled. Manufacturers of farm machinery send their implements here to be tested, and after thorough trial the tool is returned to them with a certificate stating its value. Their collection of sheep is not only the largest, but greatest in variety, that I saw upon the continent.

Rye as a Green Manure.

Mr. J. B. Root has a better opinion than many of this. In his *Manual* he says that in many parts of the West where clover cannot be successfully grown, and especially where market gardeners cannot lay aside the land for two years, nothing is so valuable as rye as a green manure. Its growth is made late in autumn, and early in spring, at a time when little else will grow; in fact, tender vegetables are off in time to sow it in September, and the ground is not needed for them again till May, by which time the rye will be as heavy as can be plowed under. So, on the farm, it seems especially adapted to precede corn, roots, potatoes and particularly fodder corn. After corn, too, it succeeds well sowing broadcast and cultivating in, leaving the corn hills standing to gather the snow and help protect the rye in winter. He sows about six pecks of seed to the acre, and as early as possible, that the plants may shoot out before winter, stand exposure better, and make a quicker and larger growth in spring. When the ground is wanted—usually from May 20th to June 1st—turn it under with a chain. It is often three feet high, and thick as only such a heavy crop can be; but with a heavy chain hung from the end of the whiffletree cross-bar to the plow-beam, with slack enough, so that it will drag just ahead of the uprising furrow, it will pull down every stalk into the empty furrow as nicely as could be laid by hand, and the whole mass buried out of sight. A little practice will soon teach just the amount of slack needed.

Of course, adds Mr. Root, I would myself, and would recommend to others, to get every fruitful of manure to be had, and apply it. And yet, upon the same land, I would, in addition, apply green manure whenever practicable. The labor of applying evenly forty loads of manure per acre, is considerable. All this is done more evenly by the green crop. Seed and labor together cost me but \$3.50 per acre. I can not say that it adds as much fertility to the soil as forty loads of manure, but I do say that in our droughty seasons it produces as great an increase of crop as do forty two-horse loads of good manure. It certainly pays to practice it, and to practice it largely, even on land well supplied with stable manure, as that increases the vigor and growth of the green crop, which is immediately, with additions, returned to the soil.

Trenching Corn Fodder.

A progressive Virginia farmer writes us: "I am disposed to grow and try the trenching of a few tons of corn-fodder next year, as I am well provided with old buildings for the purpose, and presume I can, with one straw-cutter, chop up at least two tons daily." We have no doubt others will try it the coming season.

Correspondence.

Chemical Manures and the Wheat Crop.

To the Editors of the American Farmer :

The use of chemical manures has become very extensive and almost universal. Hence it has become of the greatest importance that the practical farmer should understand something about chemistry. Such a knowledge, though limited, would be of great benefit to him. First, to enable him to judge the value of a fertilizer from its inspection or analysis, and thus be enabled to protect himself from the frauds and adulterations now so extensively practiced by manufacturers and dealers. Second—it would enable him to select the kind best adapted to the peculiarities of his soil. And thirdly, it would enable him to choose the kind suited to the particular crop to be cultivated.

There is scarcely a farmer who does not use these chemical manures more or less, and yet there is not one in ten who has any knowledge whatever of the properties, effect and value of the ingredients employed in their manufacture.

If an analysis is handed to one of them, they do not understand it, and they can form no intelligent opinion of its value from an inspection of the article itself.

If a farmer wishes to purchase a horse, plow or a machine, he examines it thoroughly in order to ascertain its value, and he is generally enabled by such an examination to form a correct opinion of its value and adaptation. In the purchase of these fertilizers, however, the great mass of farmers are utterly incapacitated for the exercise of these precautionary measures, and, consequently, they are constantly liable to be imposed upon by the dishonest dealer, as well as lose by the improper application of his fertilizers.

Agricultural science teaches us that there are fourteen elementary bodies that enter into the growth and structure of plants, and that every one is necessary to their full growth and development. These elements are divided into two classes. The one is called the organic elements, and the other the inorganic or mineral elements. The organic elements are carbon, oxygen, nitrogen and hydrogen. The inorganic elements are sulphur, phosphorus, lime, potash, soda, magnesia, chlorine, iron, silica and manganese. The distinction between these two classes is, that the organic elements are supplied from the atmosphere and exist in the primary state as gases; whilst the inorganic elements are found in the soil and exist in the solid state.

There is the farther distinction that in the process of combustion the organic elements are disorganized and driven off into invisible gases, whilst the mineral elements remain after combustion in the form of ashes.

All animal and vegetable substances—everything that lives and grows or is the product of growth—are compounded of these fourteen simple elements. But how it happens that such a vast

number and such a great variety of living organisms as we see upon the earth's surface are formed out of these few simple elements would seem to be a mystery. But the explanation is very easy when we understand that this results from the power they possess of infinite combination—like the twenty-six letters of the alphabet, which, though small in number, can be so combined and transposed as to express all the words of our language.

Chemistry teaches us that about 95 per cent. of all vegetable growth is taken from the atmosphere, or is compounded of the organic elements. Of these, carbon constitutes about 45 per cent.; oxygen about the same; hydrogen from 7 to 9 per cent., and nitrogen the balance. Of the fourteen elements necessary to feed the plants, three of them, viz: carbon, oxygen and hydrogen, are supplied abundantly from the atmosphere, and nothing that the farmer can do can either increase or diminish the supply. But they are invariably supplied in keeping with and in proportion to the mineral elements and the nitrogen furnished from the soil. Of the mineral elements, seven—that is, soda, magnesia, iron, chlorine, sulphur, silica and manganese—are supplied in sufficient quantities by all soils, however poor, and the practical farmer need give himself no concern about them.

The four remaining elements, viz: Lime, potash, phosphorus or phosphoric acid, and nitrogen, are alone wanting, and are all that is necessary for any fertilizer. These are called the fundamental elements of vegetation. It is true that some of the other elements are sometimes employed in compounding fertilizers, but it is mostly done for the purpose of promoting the chemical action and combination of these and making them more available as plant food.

It often happens that only three of these fundamental elements are needed, and sometimes only two. Lime, for instance, is sometimes abundantly supplied in the soil. And then, again, potash is found in sufficient quantities also. A great deal of importance is generally attached to lime, and many persons suppose that lime, of itself, is a good fertilizer and capable of restoring the fertility of worn-out soils, in the absence of vegetable matter. Lime is an indispensable constituent of all plants, as are also the other thirteen elements; but, so far as the cereals are concerned, in small quantities. Take, for instance, the wheat plant. Wheat, when burned, yields about 2 per cent. of ash for the grain and 6 per cent. for the straw,—being an average of 4 per cent. for the entire plant.

In the ashes we find all of the mineral elements that have been drawn from the soil. Of the ash, lime forms only 3 per cent., which is only about two ounces of lime to the hundred of the wheat, including the straw.

Other crops, however, (tobacco for instance) require a great deal of lime. A good sample of tobacco will yield as much as 15 per cent. of ash, of which a large per cent. will be lime. This fact goes to show that tobacco must be an exhaustive crop, for it draws very heavily upon the mineral elements of the soil—chiefly of lime, potash and magnesia.

WM. HOLMAN.

Cumberland Co., Va.

Preserving Fodder, Leaves and Chopped Roots in Germany.

Messrs. Editors American Farmer :

Reading your able journal, the *American Farmer*, I see in it is a great interest taken in preserving fodder in trenches, so I may be allowed to give a short description of this fodder preserving, as we manage it. In our country—the eastern part of Prussia—we raise but a small quantity of green maize,—just enough to feed in a green state from the field; nevertheless the method of souring food for cattle is extensively practiced and very much favored. When harvesting turnips or beets, we get leaves in such quantities, that it would be unreasonable and unwholesome to cattle to feed them all at once. To keep these leaves a long while and make them a tasteful, nutritious fodder, we preserve them in trenches. In the same way we preserve very often turnips, beets, potatoes and all kinds of roots. Especially when roots or potatoes are either frozen or in any way so damaged that they cannot keep good a long while, or when these products in the spring begin to grow or sprout, the only way to save them without loss is to preserve them in trenches. The same is done often with clover cut in a very rainy time, so that it is not expected to yield good clover hay.

These trenches ought to be about eight (8) feet broad, at least five feet deep and of any length you choose. The sides ought to be perpendicular, so that the mass may settle equally. To keep the food clean and to save all the juice, it is preferable to build these trenches of bricks, laid in cement. The roots are cut, packed and stamped as closely as possible, and should there be a great surplus of juice, chopped straw may be mixed with it, to enlarge the bulk. Salt is not at all necessary to preserve this fodder, but it may be used about in the proportion of a quarter pound of salt to one hundred pounds of leaves or turnips. Above the filled trench the fodder is to be heaped up like a roof, so that the rain water may run off easily. After this the heap is covered with tree leaves and with soil. A straw cover would be too porous; likewise is a stiff soil better than sand. The earth ought to be rammed so that a closed cover of about 2½ feet thickness is formed, and should the soil begin to burst or to break, stamping ought to be repeated. *The principal matter of importance* is to keep off the atmospheric air, viz: oxygen, else the mass proceeds to molder and to putrify.

Leaves and chopped roots treated in this way will undergo fermentation, and will smell and taste like what in America is named sauer-kraut.

It appears to keep good many years. On a large estate in my neighborhood, the landlord preserved about six years ago leaves in that way and covered them well. He sold his estate, and the new proprietor had no knowledge of this action. This spring the superintendent of the farm took notion to level all the ground around, and when shovelling away the little hills above the trenches, he found several of them filled with preserved leaves. The mass was about three inches above and on the sides rotten, but the rest of the food was so well preserved that cattle ate with pleasure this food six years old.

We land-owners have at present pretty hard times; hay is so scarce, that we are at a loss how

to nourish our cattle and sheep; rye is sprouted, and the straw damaged by rain; meat is consequently cheap—everybody tries to get rid of his supernumerary animals,—and last, but not least, potatoes are in great numbers frozen up, for want of hands. I will write you about our agricultural schools in a few weeks.

Yours, most respectfully,
Neudorf bei Schönlanke, Prussia.

E. WENIG.

Small Farms and Thorough Culture.

Messrs. Editors American Farmer :

Although some of our Virginia farmers well understand the advantages of small, rich, compact farms, yet many seem to persist in adhering to old rules; operating on extensive sterile surface (*made so by exhaustion*) with all the appertaining draw-backs, such as keeping up extensive enclosures, slipshod, shallow and untimely plowing, scanty manuring, &c., resulting in poor crops, both as to quantity and quality; besides, loss of time, wear and tear in sowing, reaping, hauling and housing, difficulty in keeping down weeds, briars and bushes on extensive grounds, and numerous other disadvantages too tedious to mention. Better draw in fences, sell, or even give away the surplus fields, unless you have capital and force for larger operations. Plow deep in the fall or winter, and manure thoroughly the reserved acres. If careful attention and high feeding produce fine stock, there is no good reason why high manuring and high culture should not produce great yields and profitable crops. There is, of course, a point beyond which manuring becomes waste, but it is hardly probable that any farmer is likely to reach it.

Each farmer had better find out, by experience, what fertilizer is best suited to his soil and crops. This can soon be ascertained, and trials in a small way are inexpensive. The experience of others, in this regard (soils being various) may lead to inefficiency and loss; the diversified character of soils render this course absolutely necessary to ensure the greatest benefit from almost any commercial fertilizer, and also to what extent it will profit him to use it.

As to barn-yard and stable manure it is good everywhere, and the farmer is not apt to have it spread in quantities that would prove injurious. It is not too late to make compost pens, and to collect all available substances suitable for manure that can possibly be collected. If this is done there will be a big pile by the next spring suitable for the corn-field, the orchard, the garden, especially good for orchards.

We repeat that in our present circumstances and situation, and, in fact, under almost any circumstances, the proper cultivation of small rich farms has so many advantages over large poor ones that it is really strange that more of our farmers do not adopt the system. Many of them have children, both sons and daughters, who, unless provided for, will be compelled to seek homes in Western wilds, or remain here in almost hopeless poverty, unsettled and dissatisfied. Better divide and let them have the portions you expect to give them when you become old and will only want a surface 4x8 feet. They would then know what to be at. These different portions would soon be improved and utilized as

they should be. And then the satisfaction of having one's children comfortably settled around and contiguous to the old homestead can only be appreciated by those who have tried it. The seasons bring round the holidays. *The Christmas turkey and the sweet potato pies come once a year, with all the surviving loved ones present under the paternal roof, where all can enjoy each other's presence and the good cheer of the bounteous board.

If our children are already dispersed, or ignore farming, better, by far, sell or give the honest poor man our useless broom-sedge acres. Give them homesteads if they cannot buy; or, at any rate, allow them easy terms and set them to work. They will soon make things look different. The State cannot afford to continue losing this valuable part of her population. Help them to homes; retain the population and aid in reviving the prosperity and in utilizing the vast resources that turn within her borders.

We always feel misgivings of ability to give valuable advice, but so confident are we in the advantages and good policy of the above suggestions that we feel we should no longer withhold them from the consideration of our brother farmers.

J. FITZ.

Kewick Depot, Albemarle Co., Va.

Wire, Bermuda and Guinea Grass.

Editors American Farmer:

On reading your two articles on Wire Grass, &c., in the last August number, I taxed myself to make some remarks thereon. But I have become lazy, and so much averse to writing now at my age (78,) that I have suffered the self-imposed duty to pass until so much has been said on the subject, that I doubt my ability to give any additional light. I have, however, and have had for many years, a distressing acquaintance with the grass above alluded to. I have never had on my place the Bermuda, though I am well acquainted with it. I found the former in the garden on the farm I now occupy near forty years since, which garden it had nearly taken possession of. The son of the former owner had received the seed from a traveller who spoke of it as a most valuable grass. It was sown in the garden, and progressed so rapidly that after the first year's growth the father began to suspect he had "caught a Tartar," and that if not subdued at once he would probably have a pest that would give him much trouble to get rid of. Accordingly, he had it all, as he supposed, dug up and the roots not only "barrowed and worked on top and burnt," as stated by Mr. Lane, but had the soil run through a coarse riddle. But it was no go, the grass again made its appearance, lived and did well, and to this day occupies the entire ground of the garden and very many acres in my out fields. When I took charge of the farm, I laughed at the suggestion of a neighbor, that I would have to abandon the garden. But true it was. I had a good force at command, fought it some two or three years, then pulled up stakes and moved to another locality, which the grass had not yet reached. Then making the walks entirely around inside of the pallings broad, and watching for every intruder, succeeded in keeping

it out for many years, until "freedom" came, when I lost all my available force. Since then it has marched boldly on, and is now almost ready to say: *veni, vidi, vici*. I had a valuable orchard of choice varieties of apple, peach, plums, cherries, pears, &c., &c., all of which have nearly succumbed to General Wire Grass. And although a valuable summer grazing grass, would to God I had never seen or heard of it.

Mr. Lane describes the grass pretty well. It is an enemy to tillage generally, and if he had to contend with it in the cultivation of his crops generally, especially on stiff clay soils instead of sandy, he would find it still a greater enemy.

I suspect Mr. Gilmer was mistaken in his conclusion that the specimen of wire grass sent him by Mr. Lane was the same found in his garden walks which had been brought from Bermuda. The grass found in his garden walks was no doubt the Bermuda,—very much resembling, but by no means the same as the Joint grass. I once contended that they were one and the same, and so stated to the late John C. Calhoun, who convinced me they were not. He had the Bermuda growing on his Fort Hill farm, and requested me to meet him at Pendleton with some of my Joint grass, and he would bring some Bermuda for comparison; on having the two together and his clear manner of pointing out the difference, I was in a very short time convinced I was in error. Beside the difference in the appearance of the two grasses, the Bermuda, though having the appearance of perfect seed vessels, perfects no seed. If anything like seed is produced they are not perfect, but infertile: whilst the Joint grass produces seed so perfect that they will pass through a horse, cow and probably a sheep, come out with the dung and germinate wherever the dung is scattered. Hence the dung of your stock that have eaten the grass after the seed have matured is the most convenient vehicle for distributing it over garden or farm, and such dung dropped in my lots is not preserved unless it is intended to heap it in bulk and thoroughly rot before putting out.

The Bermuda grass is propagated by the roots only. And here I would say to W. H. B., who inquired where he could obtain the roots, that he can probably do so at Fort Hill place, now occupied by the Hon. Thos. G. Clemson, within one mile of the Air-Line Railroad where it crosses the Seneca river in Oconee county, South Carolina.

In conclusion on this grass subject, Messrs. Editors, I would say to Messrs. Lane and Gilmer, that it is your old friend's advice to produce the Bermuda, but to shun the Joint as they would an unending pestilence.

But, Messrs. Editors, in conclusion, my communication to the *Farmer* on the subject of the above-named grasses is spun out long enough, and you may probably make a comparison of your correspondent and the old sow, of which it is said you must pull her ears off to get her to the swill tub, and her tail off to get her away.

But on the subject of Guinea, Joint and Bermuda grass, allow me to refer you to an article written by me for *The Southern Cultivator*, (Nov. number, p. 420.) Also an article immediately preceding mine, by G. M. B. Appended to my article the editor has some remarks to which

I have replied, which will probably appear in the next (January) number. I think G. M. B's. Guinea grass and mine are the same, and I think it probable that in a latitude south of us my variety may perfect seed, though it was asserted to me two days since that it was a male plant and perfected no seed, by a gentleman that has had some acquaintance with it. The editor of the *Cultivator* says in his remarks on my article, that he obtained perfect seed from the plants sent him by me. I suspect, however, that the seeds procured will prove to be infertile as is the seed of any of the Bermuda grass.

I presume you exchange with the *Cultivator*, and if so and the articles referred to can be of any service to you or your enquiring friends, please use them. Very truly yours, &c. S.

Cherry Hill, near Pendleton, S. C.

On Draining Land.

BY AN ENGLISH FARMER.

Messrs. Editors American Farmer :

I notice remarks on drainage of land in your very useful and practical journal—to me a most practical and valuable guide in the many branches of farming in this State. Perhaps, if I had been raised in this country, I might not have felt the full value of the very plain instructions given. Naturally we see a difference in the necessities called for to carry on farming in this and the old country (England.) There, where I was raised, under-draining was the first thing to be done; naturally the inquiry was how to do it efficiently, and at smallest cost possible. "*Freedom*," in your September number, has discussed well the theory of porosity, oxygenation, &c. I do not intend further to notice those items, but simply the mode of drainage we believed best. About twenty-five years back Mr. Mechi, of Tiptree Hall, (noted as a farmer and wheat-grower) drained his farm. Being an excellent writer, he, in a pamphlet, gave his experience (that same pamphlet fell into my hands, then a young man 19 years old) in which was laid down his first failure, and his afterwards complete success to drain a most cold, ungenial soil, a stiff clay. Generally, it must be near a city like London to carry a person successfully through expense, such as Mr. Mechi had before he drained thoroughly his little farm of 175 acres. A general system of drainage, I feel assured, is not needed on every farm in this State any more than in Lincolnshire, Old England. I will, therefore, lay down my rule I have considered sufficient as a guide. It is this: When I see water running off the land as it falls, then I deem underdraining the first thing to be done to that land; but when I see land, in an ordinary rain, receiving that rain and passing down through the pores of the earth, I deem draining such land time and money wasted.

Experience of many years leads me to the conclusion that 4 feet is as good a depth and answers all purposes so far as is required to grow wheat and all the other cereals, as well as fruit orchards. In almost every instance a shallow drain will only partially serve as a drain, leaving the land too cold to yield a full return to the cultivator of such half-drained lands. I had hoped

to have heard of a plough to take a part of the surface of the drain so as to make less labor necessary to complete the drain. Labor here, from its high price, and not being accustomed to handle draining tools, is much too expensive an improvement for most men to enter into or justify capital employed in draining; for, let me remind you, even Mr. Mechi's balance-sheets have been questioned. I believe, from what I read, even he was a great loser by his farming,—so much so, it was said, a subscription had to be raised, or Tiptree Hall, with its farm, must have passed into other hands. I have been told that tools for under-draining are made in Baltimore. The best spade I have as yet seen is a spade we had made by our village blacksmiths from 15 to 24 inches long, hammered out of a solid piece of iron into a half circle, or like the half of a stove pipe with an ordinary handle put into a socket, hammered from the same piece of iron, and, at the same time, as the blade. I purpose having one made by a very handy blacksmith, from one brought to this country by Mr. John Cocking, of "the Retreat," Port Tobacco.

Of materials used for draining, the best, undoubtedly, is round drain tiles, but long straight pine poles with a little brush would be a cheap as well as durable material, but it would depend upon the way it was done whether it succeeded or failed. If I did it we should make the drain as narrow as we could work it; the bottom should be in the form of a wedge; and the way we take the last spit out is by putting the spade in on each side. A common spade, a little hollowed, but not much, would be the one I would use, having a scoop to clean out the crumbs, so that the bottom is perfectly free from crumbs; then tread in the small poles as tight as possible, putting on the best clay coming out of the drain. Stones are good, and I have known them used, but I prefer using tiles to stones: tiles, invariably, being cheaper, as well as lasting longer. A drain twenty chains long made with poles, or 2 or 2½-inch pipes, would be sufficient,—always remembering to let your drains be made in the same direction as the water runs off the surface. If a greater length of drain is required, a large pipe must be employed. I have some strong white oak land we purpose to drain in parallel drains 15 yards wide, as soon as we can do so. I would have been more particular to make details, but would be sorry to occupy your valuable space. If called, I would consult with Mr. Cocking, and write further.—[Do! Ed.]

Yours respectfully, THOMAS CROFT.
Spring Gardens, Charles Co., Md.

The Guinea Grass.

Messrs. Editors American Farmer :

I did not notice, in the *Rural Carolinian*, the article on Guinea Grass, that you have copied, at the time, or I would have written to that paper "what I know about" Guinea grass. The "*Sorghum halapense*" is commonly known about Charleston as the Means grass, and grows extensively around Augusta, Georgia. I believe that I have the variety (seedless) that Mr. Jacques says that he has never seen. I am wrong in saying that it is seedless, as it appears to bear seed, but the seed does not grow. It was first

brought into notice by a Mr. Duncan, of Pendleton or Granville, in this State, and I got my stock direct from him. The late Rev. Dr. John Bachman, of Charleston, who was a good botanist, examined this grass and was so convinced of its seedlessness that he gave it the name of Duncan's Seedless Panicle Millet. I have it in my garden, and have had it there ever since several years before the war, and yet it has not spread from seed "argal;" it cannot bear seed, or if it does bear they fail to grow. The *Panicum jumentorum* is a totally different plant. It was much cultivated in Charleston when I was going to school there. It is an annual and can be kept through the winter only by the seed, and has no root stocks or rhizomas, but only small fibrous roots like most grasses. The seed, even in the City of Charleston, could only be saved in two ways: the one was by placing a paper or cloth under the clumps when the seed was ripe and gently shaking them, and the other was to keep around the roots clean of other grasses, and allow the ripe seeds to drop and they would come up the following spring, when the small plants were set out about three feet apart each way. A friend procured me, from Jamaica, some years since, some of this seed; but as I had the Duncan's, which did not require to be started afresh every year, and therefore came forward much earlier, and grew much taller, I soon lost it.

Beaufort Co., S. C.

R. CHISOLM.

Clover and Plaster as Fertilizers.

Messrs. Editors American Farmer:

You wish farmers to write for your paper; getting along in years, I will write some things of the past as well as the present. In my youth clover and plaster were introduced—first experimentally, and then pretty generally. There were many sceptical of the benefits set forth in their favor. Nothing of the kind had hitherto been used and rumor said that formerly the farmers neglected to make use of any kind of manure, as the recently-cleared forests were very rich. At first, when clover and plaster were introduced, it was with caution, either in lots, or if in fields, they would skip over a land and not sow the plaster, and it was found that the clover with plaster was so much better than the clover alone, that it came into general use. It was sown on wheat with very good effect, in fact it became applicable to all kinds of grain and grasses. For corn it was dropped on the hill or mixed with ashes and so used. I know sections of country where plaster is still used profusely and with success, but like other things there are two kinds, good and indifferent. Chemists say that plaster fixes the ammonia which is drawn up by the clover from the earth, as well as retains the moisture from the atmosphere. It is unnecessary to tell the farmers of the use of clover for hay and pasture, and the profit of cattle and sheep when judiciously blended with agriculture. Of manures generally, the more we make and use the greater the gain. In fact the use of manure with phosphates adds to production. Of late many complain of the effects of commercial fertilizers as not being as valuable as formerly and talk of discontinuing their use. Perhaps there are some swindlers among the dealers of them,

but it is hardly fair to condemn all on that account. Money might be condemned because there are counterfeits, but we cannot do well without it. I am pretty sure we need good fertilizers, good crops, and more money. The surest aids to them is industry, economy and management. So much in compliance with your wishes for the farmers to write for your paper.

Jefferson Co., West Virginia.

c.

Our French Letter.

To the Editors American Farmer:

Effects of Shearing.

Experience attests, that sheep, when shorn, fatten more rapidly than those left in the possession of their fleece; horses lean or even sickly, put up flesh quickly if clipped in due season and with the ordinary precautions. Animals thus treated acquire an increased appetite, and maintain the desire for more food for a longer period. M. Weiske, of Prosseau, has conducted experiments with great care to test the facts found to be true by practice. He selected two full-grown merinos, in good health, equal in age, and nearly so in weight. They were fed on 24 pounds of meadow hay, 4 pound of crushed barley, and less than quarter of an ounce of kitchen salt, daily; their solid and liquid excrements were specially preserved, and frequently analyzed contemporaneously with their food; they were supplied with a fixed quantity of water daily, and were weighed every morning; the temperature of the building during the experiments was nearly uniform. After being thus treated seven days, no perceptible difference was discovered in their relative weights. After an interval of ten days they were shorn; the appetite which had appeared languishing, suddenly became sharp. The shearing exercised little influence on the digestibility of the food, and any difference was unfavorable to the shearing. On the other hand, the animals consumed less water, pulmonary and insensible perspiration having diminished, as in practice is known to be the case. But more nitrogen was eliminated, that is, less went to the formation of meat, though no change had taken place either in quantity or quality of food. Shearing, then, is apparently unfavorable to nutrition; the loss of the fleece is the loss of so much heat, demanding the greater consumption of food, in other words producing a more vigorous appetite. For draught animals, this result is beneficial, for it stimulates the sources of strength. Horses, when clipped, become more energetic, lively and robust, and if they display an improved condition, without any change in rations, the cause must be sought in a better appetite and a superior assimilation of food. In the case of fattening stock, if this power of assimilation be a little less, the amelioration of the appetite is a compensation, for the animals will thereby put up more flesh, and to maintain the appetite in an excellent state, during the finishing stage of fattening, is the object to be realized. More food means this: more beef and nutrition, and hence the advantage of the shorn over the unshorn animal.

The Foot and Mouth Disease

Continues to make its ravages here. It is a malady more troublesome and annoying than dan-

gerous; it is unpleasantly contagious also, especially for pigs; it does not destroy the animals, but retards their development and production. The veterinary college of Alfort recommends the isolation of the affected, and the free use of diluted carbolic acid in the sheds; to break the pustules with a rag-stopper, and gargle the mouth with a preparation of honeyed water sharpened with vinegar, alum or brandy, several times a day; administering linseed or other meal drinks requiring only to be swallowed. When the feet are sore, the bedding ought to be very dry and clean, and the ulcers touched with a mixture of alum and carbolic acid in 95 parts of water. If fever be declared along with diarrhoea, half a pound of Glauber salts is added to the drinks, to cleanse the blood. Connected with the malady, is a plan of insurance in operation in Upper Savoy: the farmers of a township form a society of insurance; each animal insured pays fr. 2, and an additional franc as an annual premium. In case of loss, the farmer receives the full price of the animal, provided he has followed the instructions for treating it when diseased. At Lille there is a society that will insure cattle against all risks; the premium being five per cent. on the estimated value of the animal; a single farm can insure as far as fr. 300,000.

Feeding Stock.

When conserved green or in flower, buckwheat affects sheep and pigs, by producing dizziness, and eruptions on the skin. Sportsmen attest that this intoxication is common with hares that eat the plant. A farmer remarks, that after storms buckwheat exercises its peculiar influences most strongly.

The high and increasing price of oats draws much attention to substitutes for that food, which cannot be equalled for horses. Bearing in mind that the nutritive qualities of plants vary more in respect of climate than of season, it is not surprising to witness different results from the same description of aliment. Barley raised in southern is superior in quality to that grown in northern climates. In the East, in Spain, and in Arabia, horses fed on barley acquire more vigor and power of endurance, while in temperate climates it is fattening and refreshing in its effects. To excite fowls to lay or to hatch, oats and light wheat are given; to fatten them, barley. Whenever the French invaded Spain, their cavalry was decimated by inflammatory diseases, produced by feeding the horses on barley. On the other hand, Arabian horses, when imported into France, can only be kept in good condition by being fed, not on barley, but on oats. Barley is a tonic in warm climates, but enervating in temperate ones. Maize is but an auxiliary, it can never become a substitute; it has not sufficient force-producing power. M. Audenot experimented with feeds of equal rations, of nine pounds each, of maize and oats, on 48 of his wagon horses, extending over a period of two months. The animals lost one-fifth of their draught power,—which they recovered, however, when their full oat ration was restored. The economy in the way of oats disappeared by loss of strength. One-eighth of maize with oats turned out well, but then the maize must be American, not French. How nearly soever related maize and oats may be chemically, in phy-

siological effects they are widely different. Thayer & Dombasle recommend buckwheat for farm horses, as being capable of replacing in part oats. Their opinion is questioned; but buckwheat differs in richness according as it may have been saved, when matured, or otherwise. M. Audenot has found a mixture of 13 lbs. of oats with 6 of rye very successful; his experience extended over fifteen years, the stables containing not less than 350 draught horses; the mixture was not equal in producing vigor to oats alone, but was not the less a capital feed when grain was scarce. In former times wheat was given to stallions during the season of serving, and to mares when suckling, but wheat fattened rather than imparted strength or produced muscle.

In the production and reparation of muscular force, beans rank with oats, exciting the appetite, and excellent for horses that digest badly their full feed of grain. Field peas are favored by some for fast horses; improving their wind, while forming a change of food. Oats being unrivalled, many farmers object to either bruise or break them. Containing less farinaceous matter, they nourish less, in the sense of fattening less; this quality Messrs. Magne & Baillet attribute to an aromatic principle in the skin, analogous to vanilla, and to which the stimulating action of the grain is to be traced. Now mountain oats, small and light, are more exciting than others, because they contain less farinaceous, and more of stimulating matters, and hence why many breeders keep stocks of mountain and lowland oats, giving feeds of each alternately, never mixing, for where the ingredients of rations differ in volume, much that is small escapes unmastered or incompletely mixed with saliva. M. Monclar, of Tarn, finding wine to be so cheap, and oats so dear, has employed the former as an element in rations for his horses, and with excellent results. This is the first time wine has been so employed; but it is long known in France to be of singular efficacy, when horses are overcome with great fatigue. Some sprinkle the wine over the oats, and others administer it as a drink. Horses are very fond of wine.

M. Beewer is the most extensive fattener of live stock on the continent; after years of experience he concludes, the best and most succulent meat is furnished by pigs fattened on milk, then animals fed on grain, the following ranking in order of merit: maize, barley, oats, to which may be added peas. Potatoes produce a meat light, flabby and insipid, losing much in cooking; bran, in the case of hogs, yields a flesh poor and of a bad taste; oil seeds and cake impart flaccidness, and a disagreeable taste to the meat, and beans make it hard, indigestible, and unsavory. M. Beewer counsels for the finishing of pig-fattening, a diet of boiled grain, or the latter bruised with milk; peas added to the rations of pigs, four weeks before slaughtering, will impart an agreeable flavor to the meat.

Frauds in Seeds.

Belgium has suffered during the present year from adulterated clover seed, which is mixed with colored sand and the seed of the plantain; the latter is said to have been superseded by the seeds which escape from the refuse of imported wool. The magnifying glass reveals the impurity.

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Reducing Bones.

Dr. Petermann recommends two means for reducing bones: throwing them into the urine tank, or mixing them with wood ashes and quick lime, as a compost. Professor Kupferschlaeger, of Liege, recommends their being burned with weeds, and the ashes incorporated with the soil.

Unhappily there is nothing new to record respecting the phylloxera; the habits of the bug are being better observed; and the effects of the several remedies—inundation always excepted—await the test of time.

Dr. Pierre asserts that fruit plantations, cider orchards particularly, require to be as methodically manured as ordinary cultivated crops.

Cider is economically prepared by adding 7 lbs. of red garden beet to every 2½ bushels of apples, pressing all together; the cider must not be used till the following July, when it will be free from the beet flavor.

F. C.

Paris, Nov. 27th, 1875.

Gunpowder Farmers' Club.

Messrs. Editors *American Farmer* :

The Gunpowder Agricultural Club held its last meeting Dec. 11th, 1875, at the residence of Dickinson Gorsuch. Jno. D. Matthews presided. Messrs. Henry Carroll, Jr., Edw. Acsel, Michael Hill, Prof. Parsons and others were present as guests. On the customary round of examination, the club found the

PHILLIPS CORN-HUSKER

in operation in the barn. It does its work handsomely, leaving the ears much cleaner and prettier to the eye than when husked by hand. Whether it will pay, though, is another question. Four hands and four horses were employed at it; though we believe our host of the occasion claims that with a two-horse tread-power, one hand and two able boys are sufficient to tend the machine. The quantity of corn that it will husk per day had not been tested.

Returning to the dwelling, reorganization was effected. The Prize-Corn Acre Committee reported. Their report is appended.

DISCUSSION.

Subject: How can we most effectively and profitably increase the productiveness of our soil?

Ed. H. Matthews—He would put the land into a rotation of crops, and try to get a good clover set. He would let that stand several years and turn it under. If pastured and mowed judiciously afterwards, the fertility could be kept up by the aid of clover, lime and manure.

Jno. D. Matthews—The members of the club all know his favorite hobby—shade and after-math. To accomplish these, the main point is to get well set in grass. He would consume all he could on the farm in winter, as little as possible in the summer. In consuming all he could he would not confine himself to the richest feed. He would be careful not to graze too close, but he would leave an abundance of aftermath; it is the cheapest and most effective mode of increasing the productiveness of our soils.

N. R. Miles—The first thing to claim our attention is the manure pile. He would labor to make it as large and as rich as possible. It is not a good plan to cultivate too much. He would keep land in grass as long as he could, and keep it shaded. He finds that land cultivated so much does not seem to become enriched as fast as that kept in grass and top-dressed. Top-dressing is a great benefit to land. He has been experimenting for the last year or two, and he finds that this is the best way manure can be applied to almost any kind of soil. He had a small piece of ground (heavy clay) on which he tried several ways to get a set, but did not succeed until he tried a top-dressing of manure—did more benefit than applied in any other way. We should labor to consume as much as possible on the farm, and look to the enrichment of the soil. If we enrich that it will enrich us. According to the reports of some of the members who have been competing for the prizes, they are raising three times what they did at the formation of the club. Increasing the production should be kept in view. If we don't make so much ready cash, we make it eventually in the improvement of the soil; the interest amounts to the same.

S. M. Price—His opinion is that the first thing to do is to adopt a regular rotation of crops. He would take sod for corn. He would not take off more than one other crop if he could get the ground smooth enough, but it seems necessary to take off three in order to get the ground in good condition for grass. Where it is in good condition and well set he mows three years, then pastures the fourth. This gives him an opportunity to carry out his hobby of putting all his manure on the sod direct from the stable. This season has given him proof of the efficacy of that plan. He has gathered the best crop of corn he has ever raised. Another important thing is to feed all we can in winter, and make all the manure we can. He wants to lime once in every ten years. It is better to put out one's surplus money in that way than at ten per cent. Like Jno. D. Matthews, he puts great stress on aftermath, though, if excessive, it will kill grass. Has done so for him.

I. M. Price—His idea is that a rotation of cropping is necessary on our soil. By the aid of lime, clover and plaster, we can increase the fertility of our soil all the time. It is the opinion of most of us, that the longer we can keep our land in grass the richer it becomes. He has an acre, however, that has been cultivated every year for ten years, and, at the same time, gained in productiveness. It was a truck patch for six years; then put in potatoes; then trucked them; cropped in oats, producing 51 bushels. The ninth year he grew on it 16 barrels 4 bushels corn; this year 19 barrels ½ bushel. The piece was manured lightly every year. He did not try to grow anything extra. If we farm the whole of our land, and manure, we can improve as rapidly as to let lie idle. He believes clover is a great advantage to our soil; lightens it up. He has a twelve-acre piece which gave him great trouble to plow, until he turned down on it a heavy crop of clover, and limed twice; ever since it has been light. He is satisfied growing timothy impoverishes the soil.

W. W. Matthews—In order to secure permanent improvement, he thinks it necessary to adopt a rotation, and one most important thing in carrying that out is to have plenty of manure. The best way to obtain manure is to feed all the stock on corn, and sell but little off the place. As to aftermath, he is now pasturing a field which had nothing on it since harvest. He supposes the aftermath would have cut a ton per acre. He thinks it better to pasture the aftermath off than to let it lie all winter. In reply to a question Mr. M. said he attributed the heavy growth of aftermath on the field referred to, to the use of commercial fertilizers, principally bone. He is pasturing sixteen head of cattle on that field (fifteen acres) and thinks the aftermath heavy enough to last them all winter. *Question*.—What was the cost of the fertilizers? *Answer*.—Eleven dollars per acre, applied on wheat; yield of wheat was 30 bushels per acre. Without the fertilizers, he thinks the field would not have produced half that. In reference to the use of bone and lime together (the use of the two in conjunction had been referred to in the earlier stage of the discussion) he knew of a gentleman who had used bone on land recently limed with entire success, the bone showing more decided results on a limed portion than a portion adjoining not limed. Here followed a desultory talk hinging on the generally-accepted opinion that bone is powerless when applied to land recently limed.

T. T. Gorsuch explained, by stating that in the soil lime goes through a regular round of changes, from carbonate back to carbonate again, and one of those changes is phosphate. If bone be applied when the lime is in that stage, its effects are lost.

B. McL. Hardisty—By his system of farming it is difficult to have the advantage of clover as an enricher of the soil; therefore he avails himself of any green crop he can catch to turn under. So he turns under such nitrogenous crops as rye, beans and peas. He is debarred from keeping much stock; consequently he does not make much manure. He endeavors to give back to his land in chemical fertilizers what his crop takes from it. In applying such, he has a view to their constituent elements, and hence to their adaptation to the needs of the crop to which they are applied; otherwise loss is incurred.

Joseph Bosley.—He improves by putting on all he can make that will give fertility and by buying in the market that which is promotive of the same. It is very well to adopt a rotation of crops, but we cannot always carry it out. We cannot get sets to stand as long as we would like them to stand. He has often been compelled to let sets lie but one year. He has found a small portion of lime profitable at every breaking of the sod; he would not break under three years. Some lands will keep clean, and one can pasture or mow for half a dozen years. Others again will go to filth, such as wire grass, ox-eyed daisy, &c. He thinks he can say for himself, that his land is improving and the same for most of the members of the club. For the last few years he has been endeavoring to extend his breadth of sod and to grow more grass. He is sowing orchard grass. Some writers are condemning Kentucky blue grass and recommending orchard. People have found out that it will

feed and fatten more stock and make a better sod. He would advise the use of it as a step in the direction of improvement. He thinks he can see the greatest change imaginable in a corn field which was orchard-grass sod. *Question*.—Have you had any difficulty in setting on up-land? *Answer*.—Had not. He has a ridge field well set; without the orchard grass to help the timothy, he would have had no set at all. *Question*.—Had the sod on which you have grown the fine fields of corn been pastured or mown? *Answer*.—Pastured. *Question*.—Was there an aftermath of orchard grass left on the land? *Answer*.—Not much; he does not harvest the orchard grass on rough land; pastures it entirely, and largely with sheep. *Question*.—If you were to mow that orchard grass and not pasture it, what would be the effect on the improvement? *Answer*.—The land would not improve so fast. When he sows all three grasses, viz: clover, timothy and orchard grass, he uses but one bushel of orchard grass.

T. T. Gorsuch.—The basis of improvement for heavy clay, heavy and medium loams, is lime; for light land and sandy loam is ashes; these are the prevailing soils. An advisable rotation of crops should be adopted and adhered to, in order that the land may be set to and the better kept in grass. Clover and plaster are the cheapest sources of improvement, and all admit that constant attention should be given to making and saving manure, which should be supplemented with commercial fertilizers. The different kinds of land require different kinds of treatment. For old field he would plow down guano, then lime and set to grass as soon as possible. He would plow clover down the second year; this would bring the sod up to a fair state of improvement. He would then proceed as on other improved land. He would take off but two crops if he could manage it in that way, but he cannot do that well. The profitability is more difficult to come at. There is no difficulty in improving with plenty of manure. The manure pile is the farmer's gold mine. Formerly, when he could attend to the management of his manure himself, he used with it a great deal of earth. For the improvement of land, manure acts best plowed down; for growing crops, on top. Clover plowed down full of sap, does no good. Latter part of August is the right time to turn it down.

Joseph M. Gorsuch.—Supplying land with what it needs and scraping lightly will suffice to get it into grass. It should lie at least two years in grass, and get what advantage of it it could. He has always been successful in commencing in that way with old worn-out ground. He has found great advantage from using lime. Land is all the better of lying three years in grass and of taking off two grain crops in a rotation.

A. C. Scott.—Considers lime, clover and plaster with manure, the most important elements in a system of improvement. He finds that where he can get a good set of clover and uses plaster, the improvement is more rapid. It is good policy to make all the manure we can and have it as rich as possible.

T. G.
Baltimore Co., December 20th, 1875.

REPORT OF MEASURING COMMITTEE.

Below we give the results of the measurement of the competitors for the prize offered by the Club.

The committee on prize corn acre made the following report:

To the Gunpowder Agricultural Club:

The committee appointed by the Club to have the ground and corn measured for the competitors for the premium of the year 1875, report that they have complied with their appointment to the best of their ability. We have had the ground surveyed by a competent surveyor, and the corn measured in a regular corn barrel, with the following results:

	bbls.	bus.	pks.
Edward Matthews raised on one acre.....	22	8	3
Wm. W. Matthews " " " " " " " " " "	25	0	0
J. M. Gorsuch " " " " " " " " " "	25	0	2
T. T. Gorsuch " " " " " " " " " "	27	0	3
Edwin Scott " " " " " " " " " "	20	2	0
Samuel M. Price " " " " " " " " " "	23	7	3
Abraham Scott " " " " " " " " " "	21	2	0
Joseph Bosley " " " " " " " " " "	26	7	1
Jos. Bosley's average yield on five acres....	24	3	3
Edwin Scott " " " " " " " " " "	19	4	8
Sam'l M. Price " " " " " " " " " "	30	6	0

T. T. Gorsuch and Joseph Bosley having produced respectively the largest field of corn on one and five acres, are entitled to the premiums offered by the Club. All of which we submit to the Club.

SAMUEL M. PRICE.

I. M. PRICE.

E. H. MATTHEWS.

In our next issue we will publish Mr. T. T. Gorsuch's report of the cultivation of his crop.

Our Fisheries.*Messrs. Editors American Farmer:*

By the merest accident I have at last resurrected a copy of the pamphlet upon the "*Value of the Potomac Fisheries*," published in 1853, by the late Col. John A. Washington, for which I advertised in your paper in April.

Col. Washington gives about the same number of fisheries that I do (73.) His valuation and mine, strange to say, with the advance in prices of everything added, would so nearly accord, that it might be supposed to be done by the same hand.

The pamphlet is too long to be published in your paper, therefore I send you a brief synopsis of the most interesting portions of it. Col. Washington, after giving the name and expense of each shore and the catch of fish, sums up the whole in two tables, thus:

Maryland shores, 23.	Virginia shores, 17.
\$16,500 rent.	\$19,715 rent.
\$70,000 expense of fishing.	\$63,700 expense of fishing.
1,098 men and 65 horses.	900 men—69 horses.
41 vessels—107 men.	51 vessels—135 men.
485,500 catch of shad.	547,000 catch of shad.
16,400,000 catch of herrings.	1,500,000 catch of herrings.
\$3,350 offal fish.	\$11,000 offal fish.

In this valuation the price of shad and herrings is not noticed; why, I cannot tell. From memory I would say that shad sold from \$5 to \$10, herrings from \$2 to \$3. To-day the above prices are more than doubled. The fishing interest in 1853 had, according to Col. Washington, depreciated 50 per cent.

It is due to this subject to say that Col. Washington leveled his shafts in this pamphlet against the gilling interest, laying the cause of the depreciation of fish to that mode of fishing. That was not true. The fact in the case is,—the falling off of fish was the cause of gilling. When the owners of fishing shores could no longer rent to riparian fishermen, they naturally enough rented to whomsoever they could. The truth is all hands have helped in the universal destruction of fish.

At that time (1853) I suggested to Col. Washington the necessity of making some effort to protect the fish otherwise than by forbidding one method of fishing and encouraging the other. I also suggested the raising of fish (then thought feasible), to which my lamented friend said "*It is a Yankee humbug*," meaning the hatching of fish. Subsequent experience proves that I was correct. Consequently I claim that I am the oldest pisciculturist (theoretically) in the United States. I cannot dismiss this subject without a warning to the fishermen and fishing property-holders to look to their interest.

It is not our commissioners only who are neglecting the shad and herring interest of the State for the increase of *fancy fish*; I have reason to believe that they are encouraged to do so by scientific gentlemen elsewhere, in high places.

Yours truly,

OLIVER N. BRYAN.

The Fence and Vagrant Stock Question.*Messrs. Editors American Farmer:*

I am glad our State Horticultural Society is moving in this matter. It is disgraceful, to all interested in land and its products, that this evil should have been allowed to continue so long, simply because politicians were afraid of losing the votes of those whose stock runs at large upon the public roads.

It was hardly tolerable when we had timber for all this fencing at command, but now that it has been all consumed for that purpose and fencing material, and has to be brought from abroad at heavy cost, it has become such a burden that even turnip-heads should be sensible of the necessity of a change. This is not a matter that concerns the cultivator of the soil alone, but a great improvement, that should enlist the earnest sympathies of every citizen of the State. The whole face of the country would be improved, new and better roads would be made, at much less cost than ever before; the cost of farming very much lessened, and the time and money now necessary for the construction and repair of fencing, could be employed in valuable and paying improvements. As to the immense cost of this fencing, see what Skinner and Biddle say in the *Plow, Loom and Anvil*. Greeley has compared it to the national debt, and makes it much more onerous. The vexations and losses from trespass, no one can estimate what the sum total would be; to the fruit-grower and arboriculturist, the damage from trespass is greater than to the grain-grower and florist, because beside the loss of crop, the injury to trees is not cured in a single season, if ever. I have counted twenty-seven cows waiting for the tide to run down so they could pass round a water fence, to my peach orchard, then full of fruit worth two dollars per box, and in ten

minutes they would have destroyed more fruit than any one of them was worth. I had to place a man there whose service I needed in the orchard; no other way to prevent trespass.

I hope some good will result from your movement, but fear little is to be obtained until farmers and land-holders begin at the foundation and build up; let them as in the early days of our republic, take active interest in public affairs, send members of their own body to represent them in the councils of the State and nation, and no longer entrust their interests to men who make a trade of politics, whose patriotism is their pay; too often half-educated lawyers; men who from their pursuits are never brought into contact with the real interests of the State, yet are called to represent interests they do not understand, and a people with whom they have no direct sympathy.

How absurd is such a picture of the councils of our country. Things were not so in our early days; the farmer had then too much self-respect to be thus misrepresented; his own manliness made him step forward to attend to his own affairs, and the best Legislators our country has ever produced came fresh to our halls from the fields. "They were men," said a distinguished statesman, "whose hard hands and bronzed faces gave proof that the soil was fertilized by their sweat."

Such were the men who in our early days conducted the affairs of our country; they said little but thought and did much, and it is from the want of such men that we now suffer. Can they not and will they not again come to the front, and to the rescue? The entire absence of an agricultural element in Congress for near thirty years is a subject of deep national regret.

You will find a good law enacted by the State of Illinois, one that would suit us. Your friend Parry, the Jersey nurseryman, can tell you how it works in Cinnamon township, Burlington county, New Jersey.

Yours truly, EDWARD WILKINS.

Riverside, Md., Dec. 14th, 1875.

The Catalpa.

This familiar tree, says Landreth's *Rural Register*, indigenous to the greater portion of the Union, has been long known to a limited number to possess wood of an enduring quality for posts; as lasting, it is claimed, as the black or yellow locust—*Robinia pseudo-acacia*—but, fortunately unlike it, exempt from insect attack,—indeed, so far as our observation has extended, it is not liable to disease direct or consequential; and, as the tree grows readily from seed, there need be no impediment in propagating it to any extent desired. Fence-rows, boundaries, lanes, the roadside, impracticable plats of ground, inaccessible knolls, might each be seized upon for planting this useful and ornamental tree.

Good Farming.

Messrs. Arnold and Richey, says the Abbeville (S. C.) *Medium*, made six bales of cotton this year on the farm of W. A. Richey, near Hodges. They had neither horse or ox to plow with, and went to school one-half of the year and worked at the carpenter's trade the other half. Who can beat it?

Horticulture.

Maryland Horticultural Society.

The December meeting was held in Lehman's Hall, on the 16th, with a fair attendance.

The committee appointed to consider the propriety of the Society's memorializing the General Assembly, in favor of a law prohibiting vagrant stock, reported through its chairman, Mr. Wm. B. Sands, that having examined the subject, they concluded that the proposed action comes within the scope of the aims and objects of the Association; and that they are fully convinced that the evil complained of is one of the most serious obstructions to the progress of horticulture in the State. Reference was made to the successful efforts in other, and particularly Western States, by similar societies to this, to secure from their respective Legislatures enactments to promote in this direction the welfare of fruit-growers, market gardeners and horticulturists generally; and the appointment is recommended of a committee of nine, for the purpose of preparing a memorial (accompanied by the draft of a bill,) and of presenting the same to the Legislature of the State, urging the adoption by it of the necessary measures to secure the relief sought against vagrant stock, in the interest of horticulturists and land-owners; and also that the secretary be instructed to address a circular letter to the vice-presidents and others in the several counties, transmitting a copy of the memorial and proposed bill of the committee, and ask their aid in securing by petition from their people, and in other ways, the adoption of the measure asked.

Upon motion, the report was adopted and the committee of nine ordered to be appointed by the president, the present committee to be included in the number.

A letter was read, addressed to Mr. Rasin, treasurer of the Society, from Mr. Charles H. Mercer, one of the Park Commissioners of the City of Baltimore, stating it had been concluded to erect a greenhouse in Patterson Park; that the plan and site for the same had been selected, and that in sixty days the building would be ready for plants. Its cost, however, would absorb all the means at the disposal of the commission, and dependence would have to be placed on the liberality of the citizens of Baltimore for donations of plants or money. The propriety was suggested of placing the house under the care and supervision of a committee of the Horticultural Society.

Considerable discussion ensued, and finally it was resolved that the "Horticultural Society regarded with gratification the action of the Park Commissioners in establishing a conservatory at Patterson Park, and recommends the encouragement and assistance of the new project to all interested in horticulture."

It was decided to defer the discussion of evergreens to the January meeting, and that of camellias to February.

Capt. Chas. H. Snow, of Harford county, who had some beautiful specimens of Cattleyas, Lælias, Epidendrons and other orchids, made some interesting remarks upon that class of plants—their culture being a specialty for which he is

noted—describing their nature and peculiar treatment. Contrary to the general belief that a separate house was needed for them, he grows his in the same houses with heliotrope, geraniums, &c., and instead of deep shade being best suited to them, he finds they thrive and bloom better when grown in the direct sunlight, and close to the glass. These flowers are distinguished not only for their brilliancy of color and beauty of form, but also for their duration; many blossoms remaining perfect for from thirty to sixty days.

Mr. Brackenridge also spoke on the habits of orchids in their native habitats, and especially with reference to certain hardy species found in this country.

The Lawrence Pear.

Messrs. Editors American Farmer:

With regard to the Lawrence pear, my opinion of its good qualities increases the longer I cultivate it, and I think the day is not far distant when it will be more sought after in its season than the much-vaunted Bartlett or Seckle, and I am sure that an orchard of this variety would with us pay handsomely. With me it does not do well dwarfed, but as it comes into bearing the fourth or fifth year after planting, and the fruit is fully as large and good, nothing is gained by planting on the quince stock. Like most standard pears it does best on a gravelly loam, and up to this time I have not had a single instance of blight with the Lawrence, and I would here remark that I find those pears with hard wood, like Seckle, Gen'l Taylor, Lawrence, &c., less liable to blight than those like the Vicar, St. Michael Archange, Glout Moreau and those kinds which make very strong succulent growth. The good points of the Lawrence as a fruit, is good flavor, good keeping. I have had it in eating from October 1st to January 10th, and will have them this year until Christmas. It comes in after peaches are gone and continues the pear season, after Bartlett, Seckle and Duchess. Though it is not as high in flavor as the Seckle, still I find I can eat more of them without cloying. It is of good size for dessert, being larger than Seckle, but not so large and rough as the Duchess. When ripe it is of a rich yellow color, and does not rot at the core. It can be barreled and sent a great distance.

The trees hold their leaves until frost; they are excellent bearers, and the fruit less liable to blow off than any pear I know, except probably Seckle and Easter Beurre. CEDAR MOUNT.

Trees for Fruit and Ornament.

Messrs. Editors American Farmer:

Make your homes in the country pleasant. As the new year will soon be upon us, let all who live in the country resolve to render their homes not only more pleasant by shade trees, but, for the sake of the young members, render them more attractive and pleasant by setting some nut-bearing trees, and even a mulberry or two, not to say anything about flowers, especially roses. Shade and fruit can very pleasantly be combined in pecan, hickory, walnut and mulberry trees, each and every one of which forms a very hand-

some shade tree, and at the same time furnish very acceptable nuts and fruit, and will afford young folks much pleasure in gathering, and cause their young city friends to be always glad to visit them. Homes furnished with these cheap comforts will always be remembered with pleasure by all who have grown up in them. As the pecan tree is deciduous, ripening both its fruit and leaves here some time before frost, my trees ripen their fruit and begin to shed their leaves with October, and I can see no reason why it should not succeed much to the north of Baltimore even. Its shape is—either for shade or ornament—excelled by few trees, while its nuts are good enough to please any taste. The walnut is also a very handsome tree, and the fruit in one stage furnishes the material for the best catsup for fish of every kind, and many other dishes, too, and for pickles that are often very much appreciated. The mulberry grows very rapidly, is of handsome shape and foliage, bears abundantly of fruits that, in some varieties, as the Downing and the Hicks, are very palatable to most young persons, and some old ones too, and, when appreciated, are much relished by hogs and poultry. I have seen it stated, one acre set with mulberry trees of the Hicks variety will keep 100 hogs in good order during the time the trees are in fruit, which is 2 or 2½ months. The Hicks variety does not furnish a tree as handsome for shade as either the Downing or Miller, or even the Moretti or Macrophylla, which last is the best for the silk worm. I have one large seedling tree of this last variety, which not only bears most abundantly, but ripens its fruit so early that it diverts the attention of the crows from the sprouting corn. R. C.

Beaufort Co., S. C.

Potomac Fruit-Growers' Association.

November Meeting.

Messrs. Editors American Farmer:

On our tables were fine specimens of "The Levy Peach,"—a large yellow cling, (some of the fruit it was thought would weigh a pound each,) a seedling, and ripening in November.

(Note by Reporter.—Parties desiring to see this desirable and latest peach, can order plates, colored to the life, from D. M. Dewey, Rochester, New York.)

The President read a historical sketch of

THE APPLE.

After making mention of the very early cultivation of this fruit, and tracing it back in various languages, he said: "We have now in our fruit lists over 1,200 named varieties. There are also vast numbers that have not found their way into the books. * * In this country many of the varieties of this favorite fruit have been originated accidentally.

It is the object of the culturist to diminish the extreme vigor of the tree, in order to induce early fruitage, and at the same time to enlarge and refine the pulpy portion of the fruit.

Many think that all the varieties run out. This notion is quite incorrect. Harvey has placed this matter in its true light, by showing that the true life of the tree is in the buds, which are annual; while the tree itself is only the con-

necting link between them and the ground. Any portion of such a compound existence, grafted upon another stock, will produce a new tree like to the first."

DISCUSSION.

The President, referring to the idea that varieties run out, reminded the meeting of the subject of a late paper—"The Adaptation of Soils." He said: "Give the orchard the right location, and there is no danger of the fruit deteriorating or running out."

A Member.—Grafting has a tendency to shorten the life of trees, and thus cause varieties to run out.

President.—This is only the case when the stock into which the graft is inserted is from another family of trees. Our present system of dwarfing comes under this head.

The keeping quality of apples depends much upon the locality where the young trees grow. Here, if we wish long keepers, we must select Southern trees and varieties.

A Lady.—The nature of the soil has much to do with the flavor of fruits.

December Meeting.

On the tables were specimens of Doyenne d'Alençon, the Cydonia Japonica and a seedling apple (for a name) resembling the Tewksbury winter. With the Cydonia or Japanese quinces, which were very large, was a jar of preserves made from this fruit. Its quality may be inferred from the remark of a member, that "The Hubbard squash, preserved, would be as good."

The President continued his paper on the apple; the present topic being its *Diseases*.

Every plant, he said, has its own peculiar constitution. Plants will not produce seeds where the temperature is too elevated. Those from a humid atmosphere suffer in an arid climate, and *vice versa*. Thus we find that where there is too much moisture for some of our cultivated plants, they become too succulent, and this excess may produce a dropsical condition, that is really a state of disease. The first of such trees will drop off prematurely, and that which matures will be flat in taste, and every way inferior; and, when the soil or climate is so arid that it is uncongenial to any particular fruit, we find its growth arrested and its highest qualities not developed. This is the case in an unusually dry season.

Too much moisture, it is known, prevailing at the time when fruits, etc., blossom, is disastrous to fruitage.

We must not overlook the unhealthy influence as produced by excess of

MOISTURE IN THE EARTH.

Plants that delight in a dry soil, become weak, unfruitful and diseased when planted in such soils, while an opposite condition is equally unfavorable to those that are naturally aquatic.

Experiments prove that certain plants are rendered sterile by the production of male flowers alone, when exposed to too much heat, and by an opposite treatment of low temperature they produced female flowers.

A high degree of heat and moisture in Mexico makes a grass of our wheat, without ears or grains.

A diminished temperature on the other hand removes the stimulus to growth, and leads to the

suspension of vital action in proportion to its reduction.

It is believed that the injurious effects of frost upon our fruit trees is not so much from the degree of cold to which they may be exposed, as to the condition of their

SAP CIRCULATION

at the time of exposure. If the sap has been excited by warm weather, followed by a sudden depression of temperature, disease follows, even if the cold be not severe.

APPLE BLIGHT

is a malady of very serious character, particularly in the Western States. It resembles the fire blight of the pear. When the blight occurs the diseased parts should be removed immediately.

THE BITTER ROT

presents itself sometimes on the skin of the apple in minute brown spots, generally after the fruit is pretty well grown. These spread and penetrate the flesh, producing a black rot, which is very bitter; the bitter taste is confined to the spots. Sometimes the rot begins in the centre of the fruit. When the fruit is thus affected it should not be gathered as early as usual.

Washington, D. C., Dec. 1875. G. F. NEEDHAM.

The Amazon Raspberry.

Mr. D. O. Munson, Falls Church, Va., writes the *Gardener's Monthly*, that he planted 200 of these and they have proved nothing but the old Belle de Fontenay; of which variety he has some still in his grounds yet, and has been trying for years to destroy. The party sending out the Amazon thinks there is some difference between them, but he *knows* there is none.

The Comet Peach.

The same gentleman sends some peaches, which he says have been sent to the Washington market for two or three years, under the name of Comet, from the Eastern shore of Maryland. "It is the best very late peach that has ever been sent to this market, bringing from four to five dollars per bushel. Do you know anything about its origin? It is from two to three weeks later than the Smock and Salway. I received some buds from Mr. Hanford, of Columbus, Ohio, of the same, but there seems to be a slight difference in the growth of the tree, which makes me think they are not the same, but the difference may be in the soil. I hope you will receive them in good condition, and shall be pleased to hear from you in relation to them;" and Mr. Meehan gives the following concerning them:

We have never seen this peach before. It is of an excellent character. The outline is very irregular,—the suture being very deep in the upper half, and almost disappearing below. The color is yellowish green, with slight red cheek, and the skin covered with very coarse down. Flesh white, pink towards the centre, very firm, somewhat juicy, free from the stone. The stone is rather long, and with sharp edges to the furrows. It was received on the 18th of October, in good condition.

Floriculture, &c.—January, 1876.

By W. D. BRACKENRIDGE, Florist and Nurseryman,
Govanstown, Baltimore county, Md.

At this season a few well-grown Chinese Primroses are a great set-off to a greenhouse; we well remember the time when there existed only the small-flowered, round-petaled, rose-colored variety, with its white companion of the same form; now we have them of many shades, and flowers twice the size, and some of them beautifully fringed; the double varieties, though good for winter bouquets, are not, according to our idea, so pretty as the single ones; they all delight in a porous rich soil, in pots well drained.

If the house has been kept warm, Begonias will now be attractive; this is a good time to propagate the herbaceous kinds by sections of the leaves; the shrubby ones by cuttings of the stems.

Stevias that have done blooming should be removed from the stage, and a few only kept from which to propagate. This will afford space for training Geraniums and Pelargoniums into well-formed heads.

If Azaleas are wanted to bloom early, a few plants ought then to be placed in a warm part of the house, as they stand forcing well; not so with the Camellia. Carnations and Roses as they make their growths and begin to show flower, ought to be neatly tied up to stakes; and observe to keep the green fly in subjection by constant fumigations of tobacco.

It should be the constant aim of the gardener to aid the proprietor in keeping up the stock of plants under his charge, by multiplication either through means of seeds, cuttings or division of the root; this insures confidence with the employer, and enables the gardener to make exchanges with his neighbor.

Lawn and Pleasure Grounds.

We have long reflected on saying something that might be the means of inducing those who are fond of flowers, and may not have either the means or time to gratify their taste in that direction, yet who might do so, if the proper material was placed before them, from which to select; and just at this moment, we have a mass of such things in our mind's eye that would afford a large and standing supply of flowers during at least nine months of the year, demanding little expense or care after planting, to keep them in good condition. The articles to which we refer are known as

HARDY HERBACEOUS PLANTS,

among which are embraced some of the greatest beauties of the vegetable kingdom. And the first one of these to welcome you in early spring, would be the Christmas Rose; a little later, the Snowdrop and Crocus would follow in train, while immediately after, the Narcissus, Hyacinths and Tulips would be jealously unfolding themselves to the best advantage, for fear that Miss Polyanthus or Mrs. Primrose would receive more of the owner's favors or attention. And should there be a spot too wet for general purposes, is that not the spot for a nice clump of *Lobelia cardinalis*? This will, if protected

with a little manure during the winter, keep flowering on during the most part of summer. And then if there is a dry knoll, what better to plant on it than the rich orange waxy-looking *Asclepias tuberosa*, as a garland around a group of *Tritoma uvaria*, which latter, though of African descent, is hardy enough with only a partial protection to withstand the cold of our ordinary winters.

And what if there is a long border or borders, parallel to a walk, leading to some definite object, as a summer house; is there anything to hinder these being adorned with perennial plants, arranged after the ribbon fashion? We say *no*; and therefore will attempt to show how this may be effected. If the border or bed is broad, for the back row we would take some of the handsomest varieties of *Pæonia officinalis*, or *P. albiflora*; for the next row, *Dicentra cucularia* or *D. spectabilis*; for the third row, *Platycodon grandiflora*, which is a kind of *Campanula* with blue flowers; and for the front line there is nothing better than the double-flowered white *Achillea Ptarmica*, which continues to bloom during the whole summer. On the opposite border or bed, we would begin the back row with the various varieties of *Iris japonica*, many of which have double flowers; next line *Delphinium formosum* or *D. grandiflorum*; or failing in these, some medium tall kinds of *Aconitums* would answer the purpose very well; and then a line of the beautiful double white *Campanula persicifolia*; making the last next the walk of evergreen *Candytuft*.

If there is such a thing as a rock-work on the establishment, we are ready to provide for the ornamentation of that also. Every one who has observed the localities which the various kinds of *Aquilegias*—*Columbines*—inhabit, must have noticed that the majority find themselves in chinks and crevices of rocks; so here on our rock-work we would give them a similar situation. Different kinds of *Ranunculus*—particularly the double-flowering sorts; in notches, where there is not much earth, the *Sedums* and *Sempervivums* would just find themselves at home; as would also many kinds of *Saxifrages*. A few modest-growing vines are often desirable, particularly if the rock-work is rough; we would in that case select various kinds of *Vincas*, *Lysimachia nummularia*, *Galium triflorum*, *Mikania scandens*; and *Aristolochia serpentaria* might also be adopted.

We like to see a crowning piece on a rockery, and for this object we would plant *Celastrus scandens* or *Staff-tree*, which, if timely divested of its few rambling shoots, soon forms a neat bush, usually loaded in the fall by its beautiful orange-colored fruit.

Various kinds of *Spiræas*, (or, as they are thoughtfully called, *Meadow Sweet*, on account of their delicate perfume,) are very desirable to adorn the flower-garden,—particularly the double-flowering varieties. While the numerous brilliant kinds of *Phloxes* appear to be almost entirely neglected, as with a trifling care they can be had in bloom at least three months in summer.

The *Veronicas* or *Speedwells* are very numerous, easy to grow, and most all of them bear blue flowers, yet we seldom see any of them in our

flower-beds; and the same may be said of our different native Gentians, and yet these last are the most beautiful products of our meadows and mountains, and which no foreign floral importation can eclipse.

We think we perceive a tendency in our people to adopt in their horticultural pursuits a preference for articles that are permanent in their nature, and to aid in furthering so desirable an end we here append a list of hardy perennial herbaceous plants, many of which may be had for the collecting, while others can be purchased of nurserymen and plant-growers:

LIST OF HARDY HERBACEOUS PLANTS, SUITABLE FOR THIS LATITUDE:

Anemone japonica, (Pasque-flower,) flowers purple and white; *A. Virginiana*, keeps flowering all summer; *Ranunculus acris*, (flore pleno,) (Double yellow Bachelor's Button;) *Actæa spicata*, (Baneberry,) *A.*; *Trollius Asiaticus*, (Globe-flower;) *Aquilegia chrysantha*, Golden, *A.*; *Delphinium formosum*, blue and white; *D. azureum*, *A.*; *D. grandiflorum*, flore pleno; the first and last are from Siberia. *Aconitum Napellus*, (Monkshood,) *E.*; *Pœonia officinalis* and *P. albiflora*, furnish some fine double and fragrant varieties, China and *E.*; *Bocconia cordata*, (foliage ornamental, China;) *Dicentra cucularia*, (Dutchman's Breeches,) *A.*; *D. spectabilis*, (Bleeding Heart, China;) *Iberis sempervirens*, (Evergreen Candytuft,) *E.*; *Dianthus barbatus*, (Sweet William) *E.*; *Saponaria officinalis*, (Bouncing Bet,) *E.*; *Althea rosea*, (Hollyhock,) a biennial in many fine double varieties. *Callæhoe Pappaver*, *A.*; *Linum perenne*, (Perennial Flax,) *E.*; *Geranium maculatum*, (Cranesbill,) *A.*; *Coronilla varia*, (Neat Pea flower,) *E.*; *Lathyrus latifolius*, (Everlasting Pea,) *E.*; *Spiræa ulmaria*, flore pleno, (Double Meadow Sweet,) *E.*; *S. Filipendula*, flore pleno, *E.*; *S. lobata*, *A.*; *Potentilla Nepalensis*; *P. atrosanguinea* Nepal; *Saxifraga Pennsylvanica*; *Astilbe japonica*, (flowers white;) *Sempervivum tectorum*, (Houseleek,) *E.*; *Sedum Sieboldii*, (Stone-crop, Japan;) *Oenothera*, (Evening Primrose,) in variety, *A.* and *E.*; *Lythrum Salicaria*, (Loose-strife,) *A.*; *Galium triflorum*, (Sweet-scented when dried,) *A.*; *Helleborus niger*, (Christmas Rose,) *E.*; *Valeriana officinalis*, *A.*; *Liatris squarrosa* and *L. pycnostachya*, *A.*; *Micantus scandens*, (Climbing, flowers purple,) *A.*; *Solidago* or Golden Rod, in variety, *A.*; *Bellis perennis*, (English Daisy;) *Achælia Patmice* flore pleno, fine, *E.*; *A. Millifolia rubra*, *E.*; *Campanula persicifolia*, flore pleno, *E.*; *Platycodon grandiflora*, (Blue and pale lilac, Siberia;) *Primula veris*, (English Cowslip and Polyanthus;) *Lysimachia nummularia*, (Loose-strife,) *E.*; *L. quadriflora*, *E.*; *Veronica Spicata*, (Speedwell,) *E.*; *V. incana*, (flowers blue,) *E.*; *Digitalis purpurea*, (Foxglove,) *E.*; *D. feruginea*, *E.*; *Mimulus alatus*, (Monkey flower,) *A.*; *Chelone glabra*, (Turtle's head,) *A.*; *Pentstemon digitalis*, *A.*; *Acanthus mollis*, (Bear's brench,) *E.*; *Verbena aubletia*, *A.*; *Monarda didyma*, (Oswego Tea,) *A.*; *Phlox paniculata*, and its numerous fine varieties; *Polymonium cœruleum*, (Jacob's Ladder,) *E.*; *Gentiana crinita*, (Blue-fringed Gentian,) *A.*; *G. saponaria*, (light blue) *A.*; *Spigelia Marylandica*, (Worm grass;) *Asclepias tuberosa*, (Orange Silk-weed,) *A.*; *A. obtusifolia*, *A.*; *Aristolochia serpentaria*, (Birthwort,) *A.*; *Nar-*

cissus, the Daffodil, its various species and varieties; *Iris japonica*, (double and single kinds,) *E.*; *Gladiolus communis*, (Corn Flag,) *E.*; *Crocus* in great variety, *E.*; *Galanthus Nivalis*, (Snow-drop,) *E.*; *Lobelia Cardinalis*, (Cardinal flower,) *A.*; *L. syphilitica*, blue; *A. Tritoma uvaria* and *regia*, Africa; *Funkia subcordata*, (White Day Lily,) Japan; *Lilium tigrinum* and *candidum*, *E.*; *Hemerocallis fulva*, (Common Day Lily,) *E.*; *Convallaria majalis*, (Lily of the Valley,) *E.* and *A.*; *Muscari comosum*, (Feather Hyacinth;) *Yucca filamentosa*, (Adams Needle,) *A.*

Note.—*A.* denotes American; *E.* European.

Best Light and Dark Roses.

The *Garden* gives the following as the best three dark standard roses: Prince Camille de Rohan, maroon; S. Reynolds Hole, crimson, flushed with maroon; and Louis Van Houtte, rich deep shaded rose. For three light sorts take Marechal Niel, yellow; Boule de Neige, white; and Baroness Rothschild, blush. Another good selection is: For the three dark, Charles Lefevre, Madame Victor Verdier, and Baron de Bonstetten. For the three light ones, Souvenir de Malmaison, Alfred de Rougemerit, and Madame Vidot.

A New Variety of Dahlia.

The editor of the *Revue Horticole* says, in introducing a letter from M. Ortgies, that "Horticulture has just been enriched by a new variety of Dahlia discovered in Mexico by M. Roehl. This plant, of which we have seen some living specimens, is very distinct from all known kinds of the Dahlia.

It is proper to say that its flowers are single, but their great number, added to the beauty of the foliage, make of the *Dahlia Gracilis*, Ortgies, a plant which will take a place in the Botanic schools, as well as in ornamental culture, where it will be employed with advantage in forming masses."

M. Ortgies writes: M. B. Roehl, collecting plants in Mexico in 1873, sent us two little tubers which he had gathered from a species of Dahlia of which he had not seen the flowers, but the leaves of which appeared to him to belong to a new kind. At its first flowering in our Botanic Garden at Zurich, during the summer of 1874, we thought we had found in the new-comer, the old *D. coccinea* of Cavanilles, but not having this kind at hand to make the comparison, the thing rested there.

This past summer, M. V. Lemoine, while visiting us, was struck with the beauty and floriferousness of this plant, which, placed by the side of our ordinary Dahlia, notwithstanding its single flowers, lost nothing by contrast, redeeming this fault by the brilliancy of its colors, and by the much greater number of its flowers; but gaining a great deal by the graceful lightness of its foliage and by its fine appearance, the flowers presenting themselves below the foliage on long stems lightly inclined, and showing well the face of the flowers." Then follows some remarks about sending the specimen to M. Carriere and its comparison with sundry other sorts, concluding his letter with the following:

"In comparing our new kind with the Dahlia *Variabilis* which has singly pinnate leaves like

the *D. Coccinea*, we find that our plant is favorably distinguished by the lightness of its foliage; the whole is lighter, more *mignon*, more graceful, stem, foliage, peduncles and flowers; and the epithet of '*gracilis*' that we have selected for this fine variety has appeared to us appropriate to express its essential character and its merits."

NOTE.—M. Lemoine, of Nancy, who has purchased the variety, will have it for sale in the spring of 1876. It is probable that orders might be sent through M. Carrière, editor of *La Revue Horticole* at Paris. NANSEMOND.

Is Potash Necessary on the Vine?

So far the fact has ever been regarded as true; but no positive experiment that we know of has demonstrated it. To-day it is otherwise, and in view of the results obtained experimentally, we can say that potash is indispensable to the vine. Experiments, to which we propose very soon to refer, of the most conclusive kind, have been made on the experimental ground at Vincennes near Paris, by M. Ville, Professor and Administrator of the Museum.

By the aid of designs made by photographs, and consequently very exact, we shall see the difference between vines which have received potash and those deprived of it is considerable; in a fruit point of view the latter are worthless. —*La Revue Horticole*.

Synonymous Pears.

In our last issue we gave the report of the London *Garden* as to the recently named Brockworth Park Pear being identical with the old Bonne d'Ezée, and we now find in *La Revue Horticole*, of December 1st, a communication from Charles Baiset, who says that having received in 1871 from an English horticulturist a circular announcing a new Pear, Brockworth Park, "the most beautiful and valuable dessert pear of the day," he soon got the so-called novelty, and having planted it in his collection was not slow in recognizing in it Bonne d'Ezée, which was discovered in 1838 at Ezée near Loehes, by Mr. Dupuy, and offered to the public by his son.

The wrinkled skin, rosy tint of the young leaf, the short growth and other characteristics, left no doubt of the identity of the two; and although it was passed over in his catalogue the information was given to several of his correspondents, with whom pomology is a specialty; and he does not now hesitate to endorse the judgment of the *Garden*.

Protecting Strawberries.

Even when they are quite hardy, some protection during the severity of winter will bring the plants out fresh, green and vigorous early in spring, and they will ripen the fruit sooner and bear more abundantly. If the soil is not decidedly rich, a coating of manure between the plants will be an excellent protection; and if much exposed add a thin covering of rye or other stiff straw, evergreen boughs or branches.

The Vegetable Garden.

Work for January.

In this section this month is one rather of preparation than active operations, although our more southern readers are doubtless beginning to plant the hardier sorts of market and truck crops. With them it is usually safe, as soon as the ground is dry enough to permit working and the average of the thermometer is not much below 45°, to put in early potatoes, carrots, beets, peas, parsnips, radishes, spinach, onions and turnips.

Manure.—Materials for increasing your compost heap ought to be gathered at every opportunity. When the ground will allow of it, it may be hauled out and put on the ground, either in heaps or spread at once. Guano and concentrated fertilizers seem to promote early maturity of products; but thoroughly mixed composts and well-rotted barn-yard manure give porosity to the soils, enable them to withstand droughts, and afford congenial pabulum to all garden crops.

Hot-Beds and Tools ought to be made ready in anticipation of their being needed.—Mats and shutters should be prepared for the former, glass mended, frames painted. All implements and tools should be set in order and sharpened, broken parts replaced, and everything put in its proper place, so it will be found when needed. The time for starting hot-beds depends on the locality and the kind of seed,—the earlier crops being, as a rule, sown about six or seven weeks before they are usually planted out. Below we give the description of a plan of hot beds with fire-heat.

Seeds should be examined and any of whose age and vitality you do not feel certain should be discarded. Prepare lists of such as are to be ordered from the seedsmen and send for them early, in order that they may be supplied before the rushing season begins. Getting your seeds early, you have a chance to test them. Prudence will determine you, of course, to stick to tested and known kinds for your main crops; but a few essays in the way of new varieties may always be indulged in, and something valuable and well suited to your soil may happily be hit.

Here are some good hints from Mr. Root's *Manual*, already quoted from, and full of good things:

"In the fall, if possible, the garden should be heavily manured, and the whole plowed, and the surface left as rough as possible, both to receive benefit from the action of frost, and also because if left in this shape it can be worked two or three days earlier than otherwise, and quite usually these two or three days are succeeded by a week or two of cold, wet weather, during which the ground cannot be touched. Peas, Onions, Radish, Lettuce—in fact, quite all the hardy vegetables—germinate at but a little above freezing, and will be decidedly in advance of any late planting; and if seed has already been planted, it sprouts and is making growth all this time.

The plow usually does better work than the spade, and saves a deal of hard work. For better looks and easier tillage, the whole garden should

be planted in long rows, and a reel and line will many times be found convenient. The currants, raspberries and strawberries should be in similar rows, so that a horse and plow or cultivator can be got through them if need be. Put your chip manure and yard refuse around the currant bushes, and leached ashes about the raspberries, and manure about everything. In fact, don't be afraid of applying too much. If your land seems to be heavy or soured from years of manuring, and the crops do not respond to applications of manure, then, for one season, apply air-slacked lime, say a bushel to three square rods, and it will produce wonderful effects, loosening plant food, releasing the stores of years, and lightening up the heavy soil. Upon old, rich garden soils its effects are often wonderful, but it should not be applied to poorer soils, nor often repeated."

The Alpha Pea.

Of the many new peas which claim attention, there is none, says Landreth's *Rural Register*, which seems to us more likely to obtain and retain popularity than the *Alpha*. It is as early as Landreth's Extra Early, which for over fifty years was unapproached;—in addition the *Alpha* is wrinkled, a quality now recognized as desirable—just as sugar or sweet corn (wrinkled when ripe) is esteemed more highly than any other. When stating these points in favor of the *Alpha*, it is, however, incumbent on us to add, the variety is not specially productive—not approaching Landreth's Extra Early, and it is of feeble habit, needing care in culture. Hence, though greatly to be desired for family use, it is not likely to become popular with market gardeners, who must have large crops to secure profit, as well as earliness. It says a good word or two about the McLean's Little Gem, the Eugenie, the Bishop's Long Pod, and the Champion of England—these are all valuable kinds for family use.

Hot-Beds with Fire Heat.

From the number of inquiries he receives on this subject, says Mr. Root, in his *Garden Manual*, he is led to believe that there are many to whom fire-wood is more accessible than stable manure, and therefore I will give the method adopted by an old patron, Mr. J. B. Mathews, of Marissa, Ill., an extensive grower of sweet potatoes and sweet potato plants:

A rising location is preferred, as securing good draft and drainage. A hill-side facing the south-east is to be preferred, as it is more sheltered from the prevailing winds, and catches best the rays of the morning sun. Stake out a place for the pit six feet wide and fifty or sixty feet long, or even longer if the hill be very steep. Excavate the pit eighteen inches deep, throwing the earth on each side of the pit. Have the sides of the pit plumb and straight, and the bottom even, gradually rising to the westward. For the furnace get an old sugar hogshead, with all the hoops well on; nail all the staves to the hoops; rip it in two lengthwise; take half of it and lay it on its flat side in the center of the pit, at the lower end—this forms the arch to build the furnace on. Build a wall of brick (one thickness

will do) across the pit, and at the same time build up the furnace with it. Build the furnace over the half-hogshead, and be careful that the arch is tight and snug, or it may fail you when most needed. The wall should be carried up one foot higher than the furnace, and the furnace should terminate in a flue in the rear in the center of the pit. Stretch a line from the rear of the furnace through the center of the pit for a guide in building the flue. For the flue lay two rows of bricks flat, end to end, and about five inches apart. Then on this foundation lay bricks on edge, flush with the inside of the bottom rows, and two bricks high, being careful to break joints. Cover the flue by laying bricks crosswise over the top. At the rear end of the pit terminate the flue in a chimney seven or eight feet high—the higher it is the better the draft will be. Use clay mortar in building the furnace and flue, and it is well to point the outside with clay, in order to have all the cracks well filled. Over this flue and furnace a floor is built of any rough boards, by running sleepers across every three feet, supported at each end, and high enough so they will not rest upon the flue. Around the ends of the sleepers, and the edges of the floor, pack sod and bank it up with the earth which was thrown out of the pit; this will make it air-tight and keep out water.

Upon the top of this floor can be placed the ordinary hot-bed frames, and covered with glass or sheeting and otherwise treated the same as an ordinary hot-bed. The heat can, of course, be perfectly regulated, and it will possess especial advantages during cold snaps, in cloudy weather, &c. In fact, many a gardener longed for something such during the unusual changes and hard freezes last April. The brick-work ought to be dry before fire is used. A sheet-iron door can be easily improvised. When dry, start a fire, leaving the half-hogshead, and it will soon burn out. If draft and flue are right it will be ready for use in about ten days. A few feet immediately over and adjoining the furnace will be too warm for anything but Peppers or Tomatoes, and even for these, perhaps, the nearest space had best not be used, but left vacant.

A considerable control over the heat can be had by making two small holes in the wall, near the furnace, and two corresponding ones near the chimney. If the bed gets too warm open these, but keep them closed when not needed for this.

On the Culture of Cabbage.

The question is of frequent occurrence—why cannot private families have head cabbage as early as the market-gardener? Simply because of the imperfect culture and insufficient manuring. The market-gardener feeds his cabbage crop without stint, and with the rankest food; frequently ploughs in the manure in the autumn, turns it up in the spring, and thoroughly incorporates it with the soil—plants early, cultivates deeply, not simply tickling the surface with the hand hoe, but uses the plough and the horse-hoe; that cannot always be done in the comparatively small family garden, but the spade can be used, and that is the next best thing. Use it freely, dig deeply, and the result will surprise those who have heretofore relied upon the hoe alone.—*Landreth's Register*.

Agricultural Calendar.

Work for the Month—January.

No season is more appropriate than this for the husbandman to settle upon a decided system to be followed in conducting the operations on his farm. Once fixed upon, this system, which will not be for a single year, ought to be adhered to. Temporary convenience, which may sometimes suggest a resort to make-shifts and divergences, ought not to be thought of. Plans maturely considered and then closely followed cannot fail in the end to prove more profitable than aimless resort to contrivances, whose only recommendation often is the supposed saving of time or trouble.

Do not undertake too much. Over-cropping and the sacrifice of thoroughness to secure quantity are to be scrupulously avoided. Estimate your condition as regards manure and labor, and make all things subordinate to that. Seek to do nothing unless prepared to do it well, and at the proper time.

Plowing.—Up to the date we write, Dec. 27, the weather has permitted more winter plowing than usual to be done in this quarter. Every opportunity presenting should be availed of to break up stiff clays which are to be put in spring crops. Many advantages are thereby gained, as improvement in texture, the freeing from combinations rendering them insoluble of substances fit to be prepared for assimilation as plant food, the destruction of insect life, &c. Do not plow land when too wet, but expose as much as possible of the upturned earth to the influence of the weather.

Drains.—Look after the water furrows to see that they do not become obstructed. It is certain to result in the winter-killing of the plants if the accumulation of water about the roots is permitted.

Fencing Stuff ought to be gotten out and hauled in. Posts and rails may be conveniently worked up under shelter in bad weather. Do not let the contents of the wood-shed get too low at any time.

Working Animals need at this season especial attention, lest they suffer from irregularity in feeding, cleaning, &c. Now, more than at any other time, they ought to have good food, comfortable shelter and regular exercise. Do not let either horses or mules be unnecessarily exposed in storms; when it is needful for them to be out in bad weather, they should be well rubbed down when they come in. The stables should be properly cleaned every day, and the stalls well littered.

Milk Cows ought to have plenty of good feed and pure water. A quart each of meal and bran night and morning will pay for itself in the increase of milk. Now is the time to feed your roots, if you have been provident enough to provide them. Their succulency and health-preserving properties will largely contribute to

the well-doing of your stock. Have warm comfortable stables for your cows, and keep them clean, since nowhere does cleanliness pay better. Regular carding is an advantage when it can be done.

Breeding Animals.—Cows and heifers in calf and brood mares require extra feed, both in quantity and nutritiousness. They ought not to be kept fat, but in fine condition to withstand the drafts upon them. Warm and dry shelter ought at least to be provided for them, that they escape the pelting of winter storms. It is the worst kind of economy to allow them, or young cattle and colts, to become poor and thin. Immature animals ought to be kept in a thriving and growing condition all the time.

Sheep and Swine.—The former ought to be turned out whenever the weather is dry, but during cold rains and snow they should have sheds for protection. If these have straw strewn on the ground it will be all the better for the sheep. Do not neglect regular salting. Provide for your pigs good warm and clean pens, and give them rough materials for bedding. Pure water is a necessity for them likewise, for the lack of which they should not suffer. If ashes and lime, or rotten wood, charcoal, &c., are put within their reach it will conduce to their health. Keep them in thrifty order.

Poultry should have light, warm and dry quarters. Cleanliness is a prerequisite to their doing well; so, likewise, is a varied diet. Animal food is especially desirable, if you want eggs in winter. Messes occasionally of boiled and mashed turnips and potatoes, milk, bran mash, &c., are good for them.

Making Manure.—Materials for this purpose may be gathered and added to the compost piles at all times; but especially at this season should care be taken to have the manure from the horse and cow stables and the pig pens all thoroughly mixed together, and with such other substances as may be collected suited for this purpose, the whole being, as far as practicable, occasionally turned over. Poultry dung is, perhaps, preferably kept by itself, either in boxes or barrels under shelter, or mixed with coal ashes and allowed to remain covered from the weather. For use in the garden it is especially useful and stimulating.

Farm Accounts.—Begin, if you are not already doing this, to keep a regular account of farm operations, expenditures, receipts, &c. This is equally as important for farmers as for a merchant, yet very few do it. If the habit was once acquired of keeping such accounts, it would soon cease to be troublesome, and the advantages arising from it would be so obvious, and the satisfaction so great, it would not soon be abandoned. Try it.

Remember to renew your subscription to *The American Farmer*, and to endeavor to show to your friends and neighbors that their true interest consists in their doing likewise.

Large Calf.

The Frederick (Md.) *Examiner* says: "Mr. Ezra Houck, Jr., residing about two miles northeast of that city, near Worman's Mill, has a cow that lately gave birth to a calf which weighed when ten hours old one hundred and eight pounds!"

Live Stock.

Southern Sheep-Husbandry.

Editors American Farmer:

An agricultural correspondence, spreading widely over the Southern States, to which has been more recently added considerable personal observation, has established the conviction with us that in no other part of our country, perhaps, does there exist a resource at once so fruitful, and so little availed of, as that which is possessed in the South, for the prosecution of sheep-husbandry, which is one of the most interesting and important branches of husbandry that any country can enjoy.

But while it has been easy to perceive this defect so apparent in the agricultural economy in the South, amounting in the aggregate to a national loss of no inconsiderable magnitude, it is not so easy to expose, as Col. Randall has done, the fallacy of the difficulties that are supposed to stand in the way, or to indicate how the real impediments which do exist may be overcome or materially mitigated. Some of these imaginary difficulties of successful sheep-husbandry may be assumed to have had their origin in the prejudices engendered in the minds of Southern agriculturists, by the sweeping condemnation of it to be found in the celebrated and popular essays of *Arator*, by Col. John Taylor—*clarum venerabile nomen*,—and it may be that these prejudices are referable in a degree also to the concurrent opinions of the no less celebrated John Randolph, of "Roanoke," who, even on the floor of Congress, gave them utterance in vehement and bitter denunciation against the harmless animal itself—going so far in his animosity to it, and to all encouragement of the great industry which it was formed to subserve, as to declare that he would go out of his way any time "to kick a sheep." Nor would it be unreasonable to apprehend that these impressions against the policy and profit of sheep breeding, as an important object of attention for the Southern landholder, have taken root the more kindly in the minds of a people unaccustomed to that minute attention which the successful prosecution of any business demands.

It is the opinion of all, that profitable and interesting as has been the growing of cattle in West Virginia, an equal amount of capital and attention devoted to sheep and wool-growing in the same section of country, would be yet more remunerating. Before the *Declaration of Independence*, there was a careful and intelligent work prepared on the climate and products of each of the then English colonies. In speaking of Georgia and her well-ascertained adaptation to the growth of silk, the vine, the olive, madder and wool, the author remarks: "Wool we (England) take in large quantities from abroad, because it is of a kind we cannot produce in England; our colonies on the continent of North America, south of New York, produce a wool entirely similar to the Spanish. No staple they could produce would therefore be more advantageous to Great Britain. It is well known that a piece of fine broadcloth cannot be made without Spanish wool." The subject of sheep-husbandry has

recently attracted more attention in our Southern and Southwestern States than at any previous period. The want of a staple or product, the cultivation of which should render productive the capital in millions of acres of mountain and other lands, which do not now yield a farthing of income, and which, from their soils, situation, or other circumstances, are unadapted to the growth of any of the present Southern staples, has struck every Southern man, as well as every traveler of ordinary intelligence, who has passed through the regions indicated. The want also of some domestic animal to constitute the basis of a system of convertible husbandry on the tillage lands of the South, to take the place of the present imperfect rotations of crops, and new and old field system, has become apparent to many of her more investigating agriculturists.—The fact that the mountain and other unproductive lands alluded to cannot be made to profitably yield any vegetable products but pasturage; that for the present, and for a long time to come, at least the bulk of them will not afford a pasturage adapted to the support of large animals, could not but suggest the growing of wool as their best, if not their only available staple. The similarity of their general climate, too, with that where wool is most cheaply grown on the Eastern continent, is a consideration promising favorably to this husbandry. And, finally, it had not failed to strike men of ordinary commercial intelligence that of those animal staples, to the production of which a Southern climate is adapted, the sheep furnishes a vastly more marketable one than any of the larger grazing animals.

The superiority of the sheep over other animals, for supporting the fertility of tillage lands, by converting a portion of their products into manure, was not so apparent. But the well-known fact that they receive the preference for this purpose in some of the best agricultural countries in the world, made it sufficiently probable to demand a full investigation, before adopting an adverse conclusion, especially as what has been said in relation to climate and the marketableness of wool, are more applicable to Southern than to most other lands.

I see that the large California fleece, which weighed 51½ pounds, has been scoured by a competent committee, and cleaned 12 pounds and some ounces of wool and burrs. The committee supposed there was about 2 pounds of burrs; leaving the fleece scoured to weigh about 10 pounds of pure wool. This don't beat the East so bad after all, as there was a fleece scoured,—I think it belonged to a New York breeder—a few years ago, which scoured about 9 pounds. The fleece before scouring weighed some 30-odd pounds.

W. C. RIDGELY.

Bethany, Brooke Co., W. Va.

Wool-Growing in North Carolina.

Measrs. Editors American Farmer:

There are large plantations in the mountainous part of the State, where the climate is adapted to the raising of Merino sheep and their grades. The proprietors can buy good strong common ewes at low prices, and then buy from a pure-bred flock of Merinoes, animals that the northern breeders will sell at moderate prices. A few of

such ewes and rams are enough for the entire flock, and he is ready for business. These will only require salting and a little grain every few days to civilize them, and during the few days when the ground is covered with snow some oats in the sheaf, with salt sprinkled over it, the flock will annually increase in numbers, and the annual average weight of fleece and quality of wool will also increase; money can be made, and pleasure had in looking after them. Wool will bear shipping to a distant and profitable market. The land will be fertilized, and as there is time to clear up the waste places an inviting appearance is made, for sheep farms do contrast wonderfully with those around them. Here, in a State where we have to feed half of the year, the poorest farm soon takes on an inviting look under the tread of sheep.

Brownsville, Pa.

J. S. GOE.

Merino Sheep in the South.

Messrs. Samuel Sands and Son :

As per request I offer a short chapter to your columns. A lack of health and private business have kept me otherwise engaged during the summer.

You have long labored to improve the waste land of the South; you have made powerful appeals to the Southern people, and yet there are thousands of planters who see their lands annually becoming worn out and their financial affairs becoming annually worse! The reason for all this is too much cotton!

There is a remedy, and that consists in a few pure-bred Merinos being introduced, and in planting less cotton, sowing more oats and rye and grass seeds; make your farm self-sustaining, and buy less through your factors, and thus cease to see your cotton crop swallowed up before the delivery of it.

Clear up the waste places of the farm and sow grass seed thereon. Tend your flocks as circumstances demand, and not as some of the shepherds of Judea did. Your waiting to get ready and buy a large flock is one of the fatal ideas of Southern men. A few Merinos now is the point, and a few of the common ewes of your own vicinity,—for next year you are just as far from being ready as now. You must also cull out the worst and give them a separate range and sell them the first chance.

Cheap land, a genial climate and short mild winters, are the natural homes of the Merino, and yet excuse after excuse for the delay is the complaint of many of your people. The political complaints of many others are ever dwelt on. Let these alone; attend to your own affairs and the political intriguers will not be so numerous or turbulent. Let them work out their own salvation, which means office to them. Why spend your time and means for their aggrandisement and the substance of your industry. Grow your own hay, grain and bacon; sell a smaller amount of cotton and it will command a higher price; sell your surplus wool, a few fat cattle, hogs and sheep, and see the wonderful contrast. A few dollars annually saved and out at interest or invested in improving the farm and farm stock, soon give you a few hundreds annually,

and this annually at interest, increases in a business career to a large amount.

In time, age compels you to leave the farm; you leave it vastly improved, with your stock improved and your bank account greatly enlarged. Your neighbors see this and in time there is a change all around you. J. S. GOE.

Brownsville, Pa.

The Dairy.

Concerning the Ear Marks of Butter Cows.

Hon. John Shattuck, a noted butter dairyman of Chenango county, N. Y., said at the late convention of the New York State Dairyman's Association, that he had found the color on the inside the ear to be one infallible guide in the selection of a good butter cow. If the skin on the inside the ear is of a rich yellow color, the cow was sure to give a good quality of milk; that is, milk rich in butter. He said in all his experience he had never known this sign to fail. Mr. J. W. North, in the *Maine Farmer*, gives some further information concerning the subject. He observes that cows producing very high-colored butter have a large amount of the ear secretion, in many instances the whole internal surface being covered with a thick, orange-colored oily matter; on the other hand, the light-colored butter-makers present a scanty, thin and pale yellow secretion, in some cases found only at the bottom of the ear. His theory is that every animal has the power of secreting a certain amount of this yellow pigment. If the quantity be sufficiently large, secretion will take place freely in the mammary glands, the ear and skin. If, however, the production be limited, the tendency may be wholly toward the milk glands and ear, causing the animal to exhibit a pink hide, or the skin may be almost the sole avenue of escape from the body, the butter in consequence being light-colored; or there may be so little coloring matter evolved as to furnish none to the skin, and a very scanty supply to the ear and milk. In selecting Jersey cows, in order to judge in regard to the color of their butter, he recommends the ear to be inspected.

Dr. Sturtevant, in his recent address before the Connecticut State Board of Agriculture, alluded to this color of the ear in selecting cows, but he thought some caution should be observed in clearing away the secretion that may have accumulated on the skin, so that the true color of the skin on the inside of the ear may be seen. Otherwise the accumulated secretion, if taken for the true color of the skin inside the ear, would deceive, as it might be darker, or exhibit a deeper color than that of the true skin. He regarded the color of the ear as a good guide in respect to the color of the butter which the cow would yield.

Short-Horns as Milkers.

In answer to an inquiry the *Agricultural Gazette*, London, England, gives the following concerning the milking qualities of Short-horns, and the mode of developing milking qualities:

Although special animals have, and transmit, special milking properties, all Teeswater cattle have a natural tendency to milk (when treated in a natural way) and, whether the tribes trace to the herds of Bates, Booth, or Knightley, all have some very good milkers. But it is rather to individuals, than to any particular breeder's herd, that great milkers can be traced: The Warlabby Satin, Caroline, and Vivandiere, equalled as milkers any of the Bates or Knightley cows, nor were the Towneley Butterflies behind. Milking properties are only partly hereditary. Partly they are cultivated. The safest course to insure a herd of milkers, is to use the son of a deep milking cow, and to breed from the heifers when these are young, taking care that they have always plenty of exercise and abundance of wholesome food, without over-fattening them.

Poultry Yard.

Keeping and Feeding Poultry.

Mr. Thomas Sturges, Mattoon, Iowa, gives it as his opinion, after years of experience in keeping poultry, that the most wholesome food for fowls was onions, chopped up very fine and well mixed with meal. This kind of food he found to be most beneficial, and should be given to fowls of all kinds, in order to keep them in a healthy condition. In chicken cholera, and all ordinary diseases, he found this to be a most effective remedy, if given in the early stages. Sulphur should also be given to poultry. During the Winter season hens should be fed often upon meat, pounded bones, or oyster shells. On this treatment, combined with various kinds of grain, hens that were well housed and watered would lay about as well in Winter as in the Summer. If fed in this way they would seldom eat their own eggs. Farmers who desire to have their hens lay during the Winter should be careful not to allow them to roost in the trees. No matter how well fed they might be, the cold would operate injuriously upon them. They should be well sheltered from snow, sleet, and rain. He knew from experience that poultry needed large and comfortable houses. A good plan for a hen-house would be to build one upon a scale of 10 feet wide by 20 feet long, and 12 feet in height. This would give two rooms, one above and the other below. The upper one would give excellent roosting accommodation. There should be an opening in the building on the south or east side, for the chickens to go in and out. A partition should run through the lower room lengthwise, leaving an opening for the first bench in the partition two feet from the ground and three feet wide, so that half of it would be in each room. Boxes could be placed upon this, and when the hens go to set they could be removed into the other room.

Mr. Bruen, of Newark, N. J., does not think there was anything more important to fowls in cold weather than to keep them warm and properly fed. He had a good deal of experience in the keeping of poultry, and he fully agreed with the remarks which had been made upon the sub-

ject. The scraps of meat which fell from a butcher's stall mixed with two parts of cracked corn and one part of oats, made a cheap and excellent food for hens. It was also very important that fowls should have plenty of water. By attending fowls in this way he had a yield of 667 dozen of eggs from fifty-seven hens. Fowls were therefore profitable if properly cared for. In reference to vermin which were so injurious to fowls, he said a good remedy was to burn sulphur in the hen-house during the day, so that, when the hens came in at night, there would be a sufficient quantity of it impregnating the atmosphere to destroy the vermin without injuring the hens.

Carbolic Acid in the Poultry House.

Carbolic acid seems to be the most popular disinfectant now in use, and it is a valuable assistant in ridding a place of disease which has already gained a foot-hold, as well as in warding off the approach of the destroyer. The manner of using it is to form a solution of about two ounces of the acid to three quarts of water, and apply with a watering-pot, after the house has been cleaned out. Once a week is often enough to use it in ordinary circumstances, but in cases of disease, or where houses are greatly infested with vermin, it should be used oftener. For ridding the bodies of fowls of lice, use one part of acid to eighty parts of water, to which some persons add a little glycerine; apply with a brush to the roots of the feathers on different parts of the body. A better plan, however, is to always keep a plentiful supply of wood ashes within their reach, for them to dust in, when they will keep themselves free from vermin, as a general thing. —*National Poultry Journal.*

Petition on the Fisheries.

The following memorial is being circulated and extensively signed in Charles and other counties of this State:

To the General Assembly of Maryland:

The undersigned, citizens of—county, impressed with the importance of improving our fisheries and the fisheries of the whole State,—being second to no one interest in the State,—beg leave to call your attention to the magnitude of this industry. We have not less than 162 fisheries or locations in the State which from time to time have been fished—but now only about one-third of this number fished, and they doing a precarious business. Besides the above number we have room for as many more, 162 fisheries at \$20,000 each—\$3,240,000; double the fisheries and we would double these last figures and carry up our real estate to \$6,480,000; that, with the gilling interest, worth in stock at least \$800,000, would when fully in operation put afloat annually in the State one million of dollars. To do this say in from eight to twelve years would require an appropriation of from \$3,000 to \$4,000 per year—a small sum enough for such an enterprise. We would suggest a law forbidding the putting of fish of prey in our waters and providing for shad and herrings only. No salary to the Commissioners—only their expenses paid.

The Apiary.

Bee Keeping.

Mr. Hopkins, in an address before the Peninsula Agricultural Society, gave the following:

"You will allow me to mention only two or three cases that have come to my notice where ladies have derived great profit, both in health and as a means of support, from bee culture. Mrs. Tupper went from Massachusetts to Iowa a few years ago under sentence of speedy death from her physician. Taking a liking to apiculture she bought a few colonies of bees, took to the open air, was very successful, made herself in comfortable condition, with restored health, and she is now quoted throughout the land in connection with this subject. Her prize essay, for which she received a large premium, is known of and read by all apiarists. I shall be pleased to lend this to any person who desires to read on this subject. Says a young lady from Missouri: 'I taught school seven successive summers—my health failed—had an invalid mother—had to do something for a living—Mrs. Tupper's essay fell into my hands—before night I owned two hives of bees. That was four years ago. Last summer I sold \$965 worth of honey and three stands of bees; have now forty-four colonies of Italians. I take care of the bees and they take care of me.' Said a colored woman: 'I learned three years ago about bees from a woman. I had four hives then—now I have twenty-seven, and have sold honey enough to buy me a nice little lot, and shall finish a house on it this year. I got a little girl to write this to tell you it is all a notion that bees sting colored people.'

These are but a few cases that could be mentioned where ladies are not only making a good living, but actually becoming independent. A small lot is as good as a large farm, and the poor man or woman can have as large a range as the wealthy land-holder.

I should have stated before that in order to quiet your bees, and thereby gain free access to any part of the hive, a little smoke from a roll of cotton rags or dry wood is very effectual; also tobacco smoke, though it makes them cross. The bees take to the honey, and after filling themselves will allow their keeper to handle them with impunity, provided, always, that pressure is not applied.

In reply to questions from various members, Mr. Hopkins explained that there were but two varieties of bees in this country, the Black and Italian. That the queen bee laid all the eggs which produce queens, workers and drones. The queen cells in the comb are larger than the other cells and stand up above the surface of the comb. The queen lays her eggs near the top of the hive generally and in a circumscribed place. She can usually be found in that part of the hive and be removed and exchanged for another if desirable. The wax of the comb is secreted from the body of the bee and not gathered directly from the flowers. Bees consume twenty pounds of honey to make one pound of wax. The movable frame hives, with about eight frames, are now more used than any others. They are more convenient and give better opportunities to manage the work well."

Success with Bees.

The Syracuse (N. Y.) Journal reports the following:

Mr. G. M. Doolittle, of Borodino, brought to this city recently, four wagon loads of pure and beautiful honey, which he sold to Mr. Roberts, grocer in the Myres Block, for twenty-five cents per pound. The combined weight of the packages was 7,000 pounds, amounting in money to \$1,750. It was handsomely encased in 2,640 boxes, with glass in either side, showing the white covering of the cells, and they were packed in cases ready for shipment. Of this amount 4,878 pounds were produced by forty-six swarms of bees owned by Mr. Doolittle, who for a number of years has been much interested in the subject of bee culture. A year ago he possessed one hundred swarms, which came from two swarms he obtained in 1869, but the number was reduced by more than one-half by the very cold weather of last April. Now the number is one hundred and eight.

With the exception of Mr. N. N. Betsinger, of Marcellus Falls, who has two hundred and twenty-two swarms, Mr. Doolittle is, without doubt, the most extensive as well as one of the best-informed bee culturists in the country.

Oysters.

As this is the season for this fish, and I eat them for my breakfast nearly every morning, until towards spring, I think that I have a right to say how I find it best to have them dressed for such constant and prolonged use. Of course, as cream is one of the necessary ingredients, it is better adapted to the country homes; but I have no doubt that the little cream needed can always be purchased, of good quality, in your city, which is surrounded by so many cream-producing cows.

OYSTERS FOR BREAKFAST.

Take one pint of oysters, $\frac{1}{2}$ pint of milk, one large spoonful of butter, same of wheat flour. Pour the milk into the pan, with a seasoning of salt and pepper, also a sprig or two of parsley, and a slice of onion. Pour in the flour, (previously mixed smoothly with a little water) add a spoonful of butter, and let these ingredients boil. Put in the oysters, well drained, and let them all cook together until the oysters are done and well plumped. This is our breakfast dish, and I do not tire of it. Mrs. C. has the recipe furnished in the *American Farmer* of 1846, which can be furnished if needed. A little cream, say 3 or 4 spoonfuls, instead of $\frac{1}{2}$ pint of milk, renders the dish more palatable without being too rich.

OYSTERS DRESSED IN CREAM.

Take one pint of oysters, $\frac{1}{2}$ pint of cream, one large tablespoonful of flour, one large spoonful of butter, salt, and pepper—black and red. Pour the cream into the cooking-pan, with the butter and a seasoning of salt and pepper. When heated, add the oysters, previously drained, and just before coming to boiling point, pour in the flour thickening. Stir constantly, until the oysters are well plumped and the sauce well done. This is a very rich dish, and very suitable for a supper or evening party. Cannot recommend it as very digestible. C.

The American Farmer.

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WM. B. SANDS, }

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JANUARY 1, 1876.

The New Volume.

We hope our friends will not fail to remember to help forward the extension of our circulation among their neighbors and friends. We think very few of those solicited to add their names to our lists will refuse if those who know the paper will give their testimony in its favor. And those who will take our opinion, are assured that we think the tighter times are, the less they can afford to do without *The American Farmer*.

The Gunpowder Farmers' Club.

The yield of corn achieved by our venerable friend, T. T. Gorsuch, Esq., is, so far as we can recall, the heaviest ever grown in Maryland, the measurement of which is fully authenticated. Mr. G. notwithstanding his advanced age is still active in body and mind, and does not hesitate to declare his belief that he will yet reach a crop of 30 barrels to the acre.

The usefulness of these farmers' clubs, the formation of which we have so often urged, in stimulating a spirit of improvement and friendly emulation, is exemplified in the remarks given in the report elsewhere in this issue, of Mr. N. R. Miles, who said, that according to their own reports some members are raising *three times* what they did before the club was formed.

A Tribute to the American Farmer.

Our readers will do us the justice to acknowledge that we are not often found blowing our own trumpet, or vaunting the superiority of our journal over all others. We make as good a paper as we can under all the circumstances; we are favored by an intelligent and appreciative auditory; our pages are not tinged with self-interest or devoted to puffery. As a consequence we believe the *Farmer* has influence, and this is never prostituted to unworthy services, or used for personal ends.

The reception of a letter such as we give below, from a gentleman so widely known and respected, is a source of no little gratification, coming as it does without solicitation on our part.

The final injunction of its writer we commend to all our friends. The testimony it bears to the success of the *Farmer* as a means of reaching well-to-do and buying farmers, will not be overlooked by shrewd business men.

WOODSTOCK, VA., Dec. 13th, 1875.

Messrs. Editors *American Farmer*:

Gentlemen—I have long desired and delayed to express my appreciation of your journal as an advertising medium, and safe guide to farmers; and my heartfelt gratitude for the benefits flowing to me from both departments.

I am a farmer, and am also engaged in the manufacture and sale of farm implements.

I have advertised through the agricultural press generally, and especially in the journals of the South, and must say for your encouragement in well doing, and for the benefit of your patrons and others wishing to reach Southern farmers through advertisements, that, in Southern trade, I have derived more benefit from advertising in the *American Farmer* than from all other journals together.

Keep on in the work of plain and practical advice, and it is certain to continue the extension of the circulation and usefulness of your journal.

If a compliment can come from so humble a source, you may take it as such that yours is the only journal I ever solicited subscribers for, and for it I have been the instrument of making several little clubs, but not for pay, and hope to continue the work whenever and wherever I can. To other farmers I would say, *go and do likewise*. Truly yours,

L. H. MCGINNIS.

The Maryland Poultry Association.

This society will hold its third exhibition of pure breed fowls, fancy pigeons, dogs, pets, etc., in the hall of the Maryland Institute, Baltimore, on January 4th, 5th, 6th and 7th. The collection is expected to be an unusually large one.

The Maryland Agricultural College.

In our last issue we said we should probably in this give some reasons why the status and management of this institution should be changed. We indicated in set terms that it has been and is a reproach to the cause of agriculture and education in Maryland. No milder language could express its position; and its general reputation for many years does it, we are sure, no injustice.

The institution was chartered originally to supply a deficiency, strongly felt here as elsewhere, and the liberality of the State was avowedly based upon the ground that agricultural pursuits had been "most lamentably neglected" by her. When its charter was granted the General Assembly provided for an annual donation to it of six thousand dollars; and almost the only conditions imposed were that a model, or experimental, farm should be maintained, and that a series of experiments should be made thereon, with the cereals and other plants suited to the climate and latitude of our State. Besides this, the professor of chemistry, so far as his other duties permitted, was to make analyses of such samples of the soils of the State as might be sent him with that view. We believe no agricultural experiments were ever attempted to be carefully and systematically made on the farm; certainly their results were never given to our farmers; and we suppose the first correct and complete analysis of a soil has yet to be made on the premises. The technical education given was nothing. Among farmers all over the State it was a subject of derision; and, for a considerable portion of the time, we believe the chair of agriculture was not even occupied. Indeed during almost the whole of the career of this "college," even the literary instruction would not have equalled that of any well-conducted grammar school. The pupils, as a rule, were boys who ought to have been at home, tied to the apron-strings of their mothers. The practice of agricultural pursuits was neglected entirely; and so far as concerned instruction in the Mechanical Arts—a co-ordinate branch—that was hardly even thought of. Notwithstanding all this, and with the fact staring it in the face, that it was chronically impotent at the time, one Legislature, in addition to the annual endowment, gave the Institution \$45,000 to clear off its accumulated debts—the State becoming thereby an equal joint owner,—and another appropriated to it the income from the fund given by the United States for promoting agricultural and mechanical education—

of course, with the proviso that it could be withdrawn at any time, or a different disposition made of it. All this, not because any one could be found who could possibly declare that the State had derived any benefit from the school, or that it possessed any features or promise of usefulness, commending it as an object of such beneficence, but only that it was called "agricultural"—as great a misnomer as it was possible to conceive.

Yet, with these liberal subsidies, it went from bad to worse; until at last, so desperate was its condition, and so thoroughly bad its reputation, that pupils were no longer to be had. The cause of this, it is as well to plainly state, was the improper officers in charge from time to time, and the utter and ignominious failure of the institution to accomplish one single aim of those it was established to promote.

To show that we do not exaggerate its decline and inefficiency, we will here quote some extracts from official reports made about a year ago, of one of the professors, Mr. Worthington, who has long been in the college, and who cannot be taken as a prejudiced witness, since at the last election he was present—notwithstanding his official position—to vote stock of his own and proxies which he held, in favor of retaining the then and still existing management:

Under date of November 28, 1874, he reports "as to the financial condition:" "This is so wretchedly bad, that it seems to me we are all in danger of being without servants to wash our clothes or to cook our victuals, unless we get early relief. I hear that some of them have not received their wages for four months, and I know that my salary, due last May, is still unpaid. The discredit and damage done by having our affairs in the mouths of unnumbered creditors for little sums cannot be estimated;" and

"That this agricultural college is to-day no more of a school of agriculture than the Baltimore City High School is. Be the teaching little or much, it is not enough to make an impression on the character of the school that is apparent to any observer. A stranger goes to Annapolis and sees plainly, at a glance, a naval school; at West Point, a military school. I venture the assertion that he would go in and out here for a week, and from anything he might see or hear, would never have a suspicion that agriculture is our specialty, so entirely has the mention or the thought of it died out. I say this for the school: *The farming puts us to open shame,*" and "I attribute a great deal of our want of prosperity to the fact, that for years every boy who has come and gone has been a witness to the community against us!"

The same gentleman, under date of December 14th, 1874, uses the following emphatic language, the truth of which it would be venturesome, indeed, to dispute: "The college has failed absolutely as a school of agriculture, its primary

purpose," and "that the present scale of expenditure is enormously out of proportion to *any educational result of whatever kind.*" [The italics are ours.]

Here then was the edifying spectacle of a public institution of learning, of which the State was half owner—having at this time only "34 on our roll"—receiving some \$13,000 a year from the State, and yet unable to pay its teachers, or even the house servants, and with "unnumbered creditors for little sums."

Under date of Nov. 30, 1874, Mr. Hutton, another professor, reported that, for the fiscal year of 1873-74, "On the farm nearly \$3,000 was sunk!"

About this time, so low had become the fortunes of the College that the trustees,—or, rather, a majority of them, those still in control,—casting about for an expedient to improve the college, decided upon permitting the faculty to give "special" instruction. The result of this was the establishment of a "nautical school," and a department for preparing boys to pass the examinations for admission to the United States Academies at Annapolis and West Point. We have already published the circular issued, but we give it again, premising that the portion within brackets was afterwards disapproved by the Board and was made inoperative.

NAUTICAL SCHOOL

AT THE MARYLAND AGRICULTURAL COLLEGE.

To supply a want which it is believed is much felt, there has been added to the full collegiate and agricultural course of the Maryland Agricultural College a special course of instruction for youths in *navigation, seamanship, marine engineering, and all matters pertaining to the proper construction, equipment and sailing of vessels, or any particular branch thereof.*

The new chair is filled by Captain William H. Parker, a graduate of and for several years instructor in the United States Naval Academy. In addition to long and active service in the navy, Captain Parker was for seven years in the service of the Pacific Mail Steamship Company, commanding first-class steamers, running from San Francisco to Japan, China and Panama.

This addition to the course of instruction renders the Maryland Agricultural College a highly desirable institution of learning, not only for those who desire a collegiate course, but especially for those who propose to adopt the pursuit of Agriculture, or the Mercantile Marine.

[Captains and mates in the merchant service, wishing to improve themselves in the theory of navigation, seamanship, and the branches pertaining thereto, will be received at the college for such length of time as may suit them, and are cordially invited to apply for such further information as they may wish.]

Special attention will be given to preparing candidates for admission to the United States Military and Naval Academies,—the president of the college being a graduate of West Point, and Capt. Parker of the Naval Academy, and

both for several years instructors in the institutions of which they are, respectively, graduates.

The college is pleasantly and most healthfully located on the Washington Branch of the O. R. R., nine miles from Washington, two eight from Baltimore, and thirty-two from Annapolis. For further information apply to President, GEN. SAM'L JONES, College Station P. O., Prince George's County.

The result of this happy stroke of enterprise was the influx of a number of additional candidates for naval and military education, so that towards the close of the school year numbered, we believe, about 20 out of the number of 35 in attendance. These pupils, as are informed by a gentleman then connected with the institution, constituted a favored class, receiving special instruction and marked privilege, and it is within our own knowledge, that all of them, or at least all intended for Annapolis, the school with their professor at their head, week before the term closed.

After the session ended, there were no changes in the faculty. Captain Parker, a former naval officer, and who had occupied "the chair" of nautical science, was promoted to presidency, and other appointments made heretofore reported.

Mr. J. Howard McHenry, one of the trustees, a public-spirited gentleman, who has always been deeply interested in agricultural education, and who has since not only declined the presidency of the Board, to which he was elected, resigned his position as trustee, then made "That, in the future management of the college the special preparation of candidates for admission to the Naval Academy or to West Point shall not be allowed."

This, however, did not agree with the views of his colleagues as to what an agricultural college should be, and was rejected; and, though was informed by a circular issued, that pupils are "taught nothing nautical," yet special provision is still made for coaching candidates for naval and military academies, as the following from the same circular will show:

"The students entering with a view to preparing for Annapolis or West Point will be enrolled in the Freshman class. There will be no distinction between them and the other students. They will be required to pay twenty-five dollars a month extra for tuition."

Consequent upon this, the college has no pupils than last year,—the number, as we are advised by a member of the Board, being forty,—the major part of whom are preparing for the military or naval academy examinations. From another source we hear that a majority of the students are from States other than Maryland, and that, except those of the "special

are mainly in the lowest department.—agricultural instruction, so far as we are to learn, has not much improved. Paragraphs, however, appear in several of the newspapers, inserted doubtless in anticipation of the meeting of the Legislature, to the effect that its pupils are more numerous than last year," "its financial condition much improved, &c.," as though with so few in attendance and such large receipts from the "extra" fees and from the State, it ought not to be improved, at least financially.

Yet, to this institution the State of Maryland votes \$6,000 a year of the money of her taxpayers, because her agricultural interests have been "most lamentably neglected," and, as the President of the United States, about \$7,000 a year out of the fund dedicated to "agricultural and mechanical education." Witness the following:

Letter from the Comptroller of the Treasury.

STATE OF MARYLAND.
TREASURY DEPARTMENT.
COMPTROLLER'S OFFICE.
Annapolis, Dec. 8th, 1875.

Editors American Farmer:

Gentlemen—Yours received. The Agricultural College has received a donation of \$6,000 in 1858 down to the present time. They also received \$45,000 under the act of 1866, chapter 53.

They have also received \$6,000 for interest on investments of the proceeds of Agricultural College Scrip from United States, from 1868 to the present time, and within a few years or at least the present year it has been more than paid, owing to increase by re-investment. The State taxes were deducted from the \$6,000 interest, but with the additional it has netted nearly the whole amount.

Very respectfully yours, &c.,

LEVIN WOOLFORD.

The aggregate amount received, then, from the State has been over \$200,000 in seventeen years!

Now, for this sum, what have our farmers received? For it must be borne in mind this was intended to be an ordinary educational institution—the State had plenty of them, well enough endowed and poorly enough patronized. This was to fill an original void. It was to be a school where intending farmers could receive instruction in those arts and sciences bearing on their future business. It was to be more than a school—one of its features was to be an experimental (in the charter, misnamed model) farm, which were to be tried plants suited to our climate, fertilizers, machinery, &c., and records of the same were to be kept. Yet, a prominent and successful farmer of Western Maryland,

himself elected to the honorary office of "Visitor" of the college, having gone thither to see about entering his own son as a student, writes: "I saw, at the college, no fields of wheat, no clover, no timothy, no barn, no stock, no orchard."

Can any one figure up, then, the returns made for this \$200,000 received? Is there any one outside of the present Board of Trustees who can believe this College has any reason for existing any longer at all?

The results of its management is not surprising, considering that the institution has so long been an asylum for incapables. Presided over by representatives of many professions—teachers, clergymen, soldiers, doctors, lawyers,—the present Board, in turn, has had the sagacity to see the fitness of placing a *sailor* at the head of a professed *farm school*!

It has had an influence, however, and we can quote in substance if not in words the remark made recently in a private conversation, by a gentleman now occupying an exalted place in educational circles in Maryland, and whose reputation is wider than the continent, that "That institution, from its nearness to Washington and to the main line of travel thither, has done more by its failures than anything else to discourage all efforts by the national government to advance the cause of agricultural education."

What is the remedy? We see only the alternative of the State retiring from this business, or insisting upon the extinguishment of the private interest and taking the control herself. We object, on general principles, to the State's embarking in any such enterprise, but we ought to have a school of practical and scientific agriculture, and this seems the only hope of securing it.

The divided management can never succeed, nor the representatives of the State be expected to work harmoniously with those of the stockholders. It is contrary to all experience. Especially in this instance there is no reason for the private interest controlling by preponderance of representatives so great a yearly subsidy from the State. The original subscription to the stock of the college corporation was only \$50,000, and its own books show that a very considerable proportion of this never was paid. From time to time several parcels of the real estate were sold, and later an equal joint interest in what remained was transferred to the State; and a sale now of the entire stock interest, in our opinion, would probably not bring a sum equal to that annually received from the State, considering in the account the debt resting on the institution.

Besides this, it is well known that in money,

probably most cases, the subscriptions were intended to be donations; and the owners now, knowing there is no market, and slight intrinsic value to the stock, are likely to give their proxies to the first applicant. Nothing prevents interested or even irresponsible parties from thus obtaining control, and more than once contests—entirely personal—as to who should administer the affairs of the corporation, have been decided by the vote of the stock of Dr. Mercer, of Louisiana, now deceased. This subscription was undoubtedly really meant to be a gift, and no one can now be supposed to represent the views of its former owner, even if his executors can legally execute a proxy.

The only plan we see, promising to result in giving the State an institution anything like that it should have for the advancement of agriculture and agricultural education, is for the General Assembly to appropriate a sum sufficient and offer to buy out the stock,—giving the holders of it an opportunity of voting upon its sale at the annual meeting, which is held in April, and providing that if a majority of the stock is voted against the proposed sale, then the officials to be designated—as the Governor, Comptroller and Treasurer—shall constitute a commission to sell for cash, at public sale, the interest of the State in the real, personal and mixed property; and also that after the 1st of July the State's appropriation shall cease, and the income from the investment of U. S. land scrip be withheld until the following session of the Legislature.

As to the sum which would be equitable and proper for the State to offer to pay, there may be some difference of opinion, especially as the proposed sale of the State's interest would virtually act as a constraint. We think, however, \$1 a share would be a fair price for the State to offer; and then, we think, many holders would prefer relinquishing their stock, without pay, in accordance with the original design of their subscriptions.

The transfer being made—if the State's offer is accepted—the whole control should be vested in a small governing board.

Five members would be ample in number. One of these ought to be a direct representative of the State, and the appropriate officer would be the superintendent of public instruction. His associates should be appointed by the Governor, and their term of office made five or more years. Their selection should be limited to intelligent and practising farmers. If the State Agricultural Society and the State Grange of the Patrons

of Husbandry are regarded as bodies representing the farmers of the State, then the President of the first and the Master of the other, *for the time being*, might properly be made members, and the other two might be taken from the two shores of the State.

To this Board, formed as may be decided most likely to be efficient, the institution should be turned over as soon as the proposed change of title could be effected, and all matters connected with the establishment of a *real* agricultural school and experimental station, the question of a removal from the present site, its sale, and the selection of another, be referred.

The Legislature might, with propriety, specify with some precision what such an institution shall teach, and what kind of a farm shall be kept up; and prevent, by positive prohibition, any such fantastical performances as we have seen of late in the burlesque we now have.

We believe this will satisfy the farmers of the State. We think nothing else will. If the clubs, granges and other farmers' associations will unite in asking this or similar action at the hands of the Legislature, it can doubtless be secured. Otherwise, it is probable the appropriations will be entirely withdrawn from the present institution, and no provision made for anything better in its place.

Granger Cultivator—Lucerne in Virginia.

Mr. W. C. Conrad, of Middlesex Co., Va., coming in to pay his subscription to the *Farmer* for the coming year, took occasion to say that the Granger Cultivator, which was several times referred to in our last volume, and for which Mr. R. L. Harvey, of Rehoboth Church, Va., is the general agent for Maryland and Virginia, is destined, as he believes, to almost revolutionize corn culture in the tide-water country, so efficient a labor-saver it is found to be. With a pair of horses he has done just double the work of two men and two horses in an adjoining field; and with it he is confident one man can "tend" sixty acres of corn.

His success with a small quantity of Lucerne seed which he received through us two or three years ago, justifies him in an enthusiastic report of the value of that plant for his section of country. It produces an immense quantity of forage, with which he soils some cattle during spring and summer; and in the fall his sheep are turned on it. With him it last year produced a crop of seed, which he thinks matured sufficiently to germinate, though, owing to a freshet, he was unable to save the crop. If Lucerne will ripen its seed in Virginia and succeed as well generally as it has so far done with Mr. Conrad, it will prove, we prophecy, a great blessing to the State.

Our Advertisers.

With the opening of the new year a number of our regular advertisers begin to present their claims to the readers of the *Farmer*. In our supplement will be found new advertisements of R. W. L. Rasin & Co., of their Soluble Sea Island Guano, Alkaline Phosphate, &c.; of Slingluff & Co., of Dissolved Bones, Oil Vitriol, Chemicals; of J. M. Rhodes & Co., of their Standard Manures; of Messrs. R. J. Baker & Co., of Bone Dust, Materials for Fertilizers, &c.

A Change of Firm.

By an oversight an omission was made of the reference we intended making in our last to the new firm of *J. U. Durborow & Co.*, general dealers in Agricultural Implements and managers of the Kirby Reapers. Mr. D., who has heretofore been alone, has made an arrangement with Mr. R. E. Hayward, and, with increased facilities, expects and will be able to do a greatly enlarged business.

The Baltimore and Potomac Railroad.

This link in the great chain of communication between the North and South is being still further improved by the laying of a double track the entire distance between this city and Washington. The work is being rapidly pushed forward, and, with other improvements, will make this road more popular than ever, not only with through but with local travelers.

RECEIVED.

From Messrs. *Luther Tucker & Son*, Albany, N. Y., we have THE ILLUSTRATED ANNUAL OF RURAL AFFAIRS FOR 1876, edited by Jno. J. Thomas, and containing a large variety of useful information for the farm, the garden and the household. The engravings are numerous and good, and the volume is well worth its cost, which is only 30 cents.

Jas. Vick, Rochester, N. Y., sends us his FLORAL GUIDE for 1876, price 25 cents a year. Beautifully printed and illustrated, this number compares favorably with any of its predecessors.

From Messrs. *Landreth & Son*, Philadelphia, we have RURAL REGISTER AND ALMANAC for 1876, an unpretending little volume, which is very widely known and contains a great deal of useful and interesting matter to all gardeners, besides lists of the seeds offered by this well-known house. It is distributed gratuitously.

Mr. *J. B. Root*, Rockford, Ills., sends us a copy of his GARDEN MANUAL AND SEED CATALOGUE. This work bears internal evidence of being prepared by a skillful and successful gardener. No one who has a garden, however small, but should send for a copy of it. As will be noticed, we have ourselves made some considerable extracts from it, and have others marked for future use.

Were the subject one of less importance to our agricultural classes than it is, we should think it proper to make some apology for the space occupied in this No. with the agricultural college; but it is time the matter should be brought fully before the public.

Changes in Publications.

The *Rural Carolinian* has been transferred by its former proprietors, Messrs. Walker, Evans & Cogswell, to Col. D. Wyatt Aiken, who assumes its entire management, business and editorial, its former editor, Mr. D. H. Jacques, retiring. Col. Aiken is widely known as an able and effective writer, and will doubtless conduct the *Carolinian* (which will henceforth be published at Cokesbury, S. C.) with spirit and discretion.

The *Gardener's Monthly*, published by Charles H. Marot, at Philadelphia, and so long and successfully edited by Thos. Meehan, has absorbed the *Horticulturist*, of New York. The combination of these two journals will result in a higher standard than ever in this branch of journalism, and the management could be placed in no more able and zealous hands than those of Meehan.

Experiments in Crop Feeding.

We have heretofore alluded to Prof. Stockbridge's experiments in the application of fertilizers, and we give now a report of some made by himself, and given in the *Scientific Farmer*:

"One of our experiments was with the grass crop. A piece of poor, 'bound-out' sod land was taken, and, without previous cultivation or re-seeding, manured with the following, per acre:

Sulphate of Ammonia, lbs.....	130
Sulphate of Potash ".....	212
Superphosphate of Lime, lbs.....	62

The first was guaranteed to contain 20 per cent. of nitrogen, the second 16 per cent. of potash, the third 13 per cent. of soluble phosphoric acid. Hence there was applied: nitrogen, 26 pounds; potash, 34 pounds; phosphoric acid, 8 pounds; an amount of each equal to that contained in 2,000 pounds of hay. The result was as follows:

Total yield, lbs.....	3,750
Natural yield, lbs.....	1,800
Increase, lbs.....	1,950

The natural yield was ascertained from an adjoining unmanured plot. The amount of fertilizer applied can now be bought for ten dollars.

A second trial was with oats. The soil chosen was rough and gravelly, and fertilized per acre as follows:

Sulphate of Ammonia, lbs.....	200
Sulphate of Potash, lbs.....	163
Superphosphate of Lime, lbs.....	154

Guaranteed composition same as before.—Therefore we applied: nitrogen 40 pounds; potash, 26 pounds; phosphoric acid, 20 pounds; an amount of each equal to that contained in 50 bushels of oats, with the natural proportion of straw. The results obtained were as follows:

Total yield, bushels.....	60
Natural yield, bushels.....	15
Increase, bushels.....	45

According to present market prices the fertilizer would cost fifteen dollars.

Another experiment with potatoes showed some interesting results. The same lot of land was under similar treatment last year. At that time an amount of each of the same ingredients were applied, as shown by the chemical analysis to be contained in 100 bushels. The result was an increase per acre of 93 bushels above the natural yield of the soil, which was 128 bushels.

This year the same amounts were applied as the year before, viz:

Sulphate of Ammonia, lbs.....	106
Sulphate of Potash, lbs.....	213
Superphosphate of Lime, lbs.....	85

Composition the same as in the first case. Hence we applied 21.2 pounds of nitrogen, 34 pounds of potash, and 11 pounds of phosphoric acid. The result was a yield of 289½ bushels. We must ascribe about 60 bushels of this amount to the beneficial effect of last year's manuring; for the unmanured plot of last year was planted without manure this year, and yielded 128 bushels, the same as before.

The quality of the product is worthy of note. Of the 289½ bushels, 230 were large, smooth potatoes, and only 59½ small and poor ones. The product of the unmanured plot last year was uniformly good; this year there were 80 bushels of small potatoes, and only 48 of good quality, on the same piece of ground. The variety of potato was the Peerless. The price of the fertilizer used would now be about eleven dollars.

The cost of labor for each experiment has not been taken account of carefully and separately, attention having been confined to the composition of the fertilizers, and results obtained.

The Phosphates as Plant-food.

Professor Goessman in one of his lectures, reported in the *Scientific Farmer*, says the idea of special importance of any one constituent of plant-food should be banished from our minds, save in this respect, viz: That item of plant-food most lacking is most important. Previous to Liebig's time very little was known respecting the existence or necessity of phosphoric acid, and it was left to him to tell the world of the riches contained in this simple substance, and to show that bones were a prolific source of the same. By this great benefactor of the farmer was also first urged the value of guano, and its virtues explained, by reference to its constituents as found in his chemical analyses.

Since then the quantities of phosphatic manures used are almost incredible. Many farmers seeing the wonderful effects of a first application have gone on using this class of manures liberally until they no longer produce the marked results formerly obtained; merely, however, because an excess of this substance over the other essentials had accumulated.

The amount of phosphoric acid removed by crops is less than that of nitrogen or potash, but

the supply furnished by the natural soil is also less; phosphoric acid being, in fact, present in the rocks that go to make the agricultural soil in less quantities than any other article of plant-food. The deficiency is moreover made up by the relative amounts in the parts usually sold off and those retained, in a course of general farming.

The professor calls attention to an observation which has been made quite generally in former times, as well as in the present generation, namely, that in the cultivation of grain-crops with the exclusive use of stable-manure, first, the grain has failed, and then the straw; and, in the case of high manuring, that the yield of grain declined and that of the straw increased, until, finally, the entire crop failed to be remunerative. Wheat first showed this peculiar tendency, and other farm-crops are affected more or less in the same manner. This singular fact has found its explanation in the influence which the universal practice of selling grain has on the soil employed for its production. A careful examination of the seeds of all our cereals has shown that they contain an immense proportion of phosphoric acid in comparison with the straw; for instance:—

Wheat grain	0.82	per cent. phosphoric acid.
Wheat straw.....	0.23	" " "
Indian corn.....	0.55	" " "
Indian corn stalks and leaves.....	0.38	" " "

In selling the grain, from two-thirds to four-fifths of the phosphoric acid abstracted from the soil is lost for the next crop, and so on year after year. When now we consider that this acid is but slowly rendered soluble by natural agencies, the first result cannot be doubtful. The straw will find for some time still its sufficient supply of phosphoric acid, but not enough for the formation of grain. Continual demand, without an adequate supply, directly or indirectly, means exhaustion, even in the more favored localities.

Phosphoric acid occurs almost always in connection with lime, producing the compound known as phosphate of lime. The most prolific source of phosphate of lime is found in bones, and the country has been scoured from the back door and swirl tub of the humblest cot to rendering establishments, and the battle-fields, and the great western prairies, for a supply of the raw material. Bone fertilizers are found in the market in several forms. Ground bone is the simplest form, and when finely pulverized this is a valuable manure; and if one desires to lay up a store of plant-food in the soil, this offers an efficient means for so doing, since the phosphoric acid is slowly soluble, and several crops reap the benefit of the application. Raw bones contain an average of 23.50 per cent. of phosphoric acid and from 3 to 5 per cent. of nitrogen.

Bone-black waste is a refuse product of sugar refineries. The bones are burnt and ground and used in the refining process. This form of bones contains from 32 to 34 per cent. of phosphoric acid. The nitrogenous portion is driven off by burning. The phosphoric acid of bones is but partially soluble, and only gradually becomes available for plant-food. It is quite obvious that the finer condition in which the bones are used the greater is their present value as a fertilizer.

The steaming and rendering processes to which bones are usually subjected before conversion into commercial manure also improves the solubility of the phosphoric acid, by softening the hard structure and removing the fat, although some of the nitrogen is removed in the operation. To remedy, to some extent, this partial insolubility, however, the action of chemical affinity is brought to bear upon the result.

Phosphoric acid in bones is united with lime in the ratio of one of the former to three of the latter, by equivalent weights (making a tricalcic phosphate.) By adding to one hundred parts of this compound—consisting of 54.19 per cent. of lime and 45.81 per cent. of phosphoric acid—63 parts of sulphuric acid (1.73 specific gravity,) the latter unites with a portion of the lime, leaving the phosphoric acid in combination with the remainder (as mono-calcic phosphate) in a soluble condition. In practice, however, only about half of this amount of sulphuric acid is used. Hence the incomplete solubility of the phosphoric acid found in the commercial *super-phosphates*; which is the name applied to phosphate of lime treated with sulphuric acid as above described.

At the present time, so great has been the call for phosphatic manures that the supply of bones has become inadequate to meet the demand, and recourse to other sources are necessary. Just here comes in the vast deposits of so-called mineral phosphates to help supply the demand. Most noteworthy among them are those located in Central Russia, Western Germany, Southern France, Canada, South Carolina, and in the Jarvis, Sombbrero, Baker and Navassa Islands. The Navassa and South Carolina deposits now furnish our main supply. The first contains from 24 to 27 per cent. of phosphoric acid; the latter from 32 to 36 per cent. Thus it is seen that the mineral phosphates are especially rich in this element of fertility. But a difficulty lies in the fact that the phosphoric acid is nearly all quite insoluble, and from the nature of the composition the addition of sulphuric acid does not produce so good results as in the case of bones. Besides the phosphate of lime there are also present in the combination more or less carbonate of lime, magnesia, alumina and oxide of iron, which, together with the compact nature, renders the action of the sulphuric acid slow and uncertain. There is no nitrogen or potash in this class of fertilizers, so their market value depends simply upon the phosphoric acid contained in them, and especially upon the state of solubility of that constituent. These mineral phosphates are so rich in this essential of fertility that their low price makes them a valuable acquisition to our manurial resources. They furnish indeed the cheapest source of phosphoric acid so far as first cost is concerned, and, unless immediate availability is required, are a very economical source. Even in the latter case an extra addition would offset in part, at least, that objection, and also be of use in succeeding years.

It is recommended to use finely-ground mineral phosphates incorporated with barn-yard manure and composts, and also to apply them plentifully to soils rich in humus, because the carbonic acid in such situations has the effect of rendering the phosphoric acid soluble.

Some Causes of Failure in Farming.

Messrs. Editors American Farmer:

Now that the cry of hard times is heard from all departments of trade, and from every part of the civilized world, it would be surprising if the farming interest should keep quiet; and though they cannot take up the old song of short crops, they make quite as much noise on the subject of low prices. So closely are all the interests of this country connected, one cannot well be in a languid state and the other flourishing, but I think that a little examination will show that farming has not suffered as much in proportion as other branches of industry, and though the prices for farm products are not high (in fact, in comparison with war times, low,) still they are higher than many years before the war. I see by the day's quotations in Baltimore, prime red wheat, \$1.45 to \$1.50; corn, new, 55 to 65 cents, and old 70 cents; oats, 45 to 50 cents, currency; I find in a list of prices of grain extending from 1853 to 1875, that the price of prime wheat got down several times to \$1.20 gold, and corn and oats to 50 cents, and 40 cents in December, which is about equal to the present currency price for corn and oats, and from 10 to 15 cents less for wheat than now. An examination of prices of grain for the last twenty-five years shows far less variation in corn than any other grain.

When I commenced this letter it was not so much to show the comparative price of grain, as to point out some of the causes that make farming unproductive, and try to induce any one who may be dissatisfied to take a new start this year, and see if the end of the centennial year will not find him better in spirits and financially healthier. I know that the farmers are always looking with something like envy at the commercial classes; but my experience is (and I have tried both) that if most any of our farmers should go into trade, and not use more economy, forethought and diligence in business than they do in farming, they would be ruined—almost before they began. To begin: how few of our farmers keep anything like a strict ledger account, so as to know what they are doing, and if they are really losing or making money by farming. The simple fact that at the end of the year they are no better off than at the beginning, may not show that farming as a business is unproductive, but that they have not used the proper appliances to make it so. Too much is expected by a great many farmers. A farm that would not bring over \$5,000 or \$6,000 is expected to support a family, pay taxes and wages, increase in value, and have something to its credit at the end of the year. The interest of that sum would only pay the rent of a moderate house, or buy only a fair one with the lot it stands upon. My experience has been that the greater part of the failures in farming comes from neglecting the smaller matters or in carrying out the details. What would be thought of a merchant who would allow another in the same business to introduce a novelty that was attractive and remunerative, and did not immediately procure the same. Yet we see the same thing among farmers every day. One has a breed of hogs, judiciously selected, that can be made to weigh (spring pigs) 200 to 250 pounds at ten months old, but nine-tenths of

his neighbors are content if they winter their fall pigs, and make them that weight at eighteen months. One raises pork at 5 cents per pound, and the other anywheres from 10 to 15 cents,—if much corn is fed to winter. Another, by good crosses, has got his cows to give a rich milk, and has abundance of good butter to sell all the time, but most of the neighborhood stick to the old-fashioned half fed fence-jumpers, who go dry in October and keep so until they calve in May, and give milk when butter is comparatively cheap. Again, in the comparatively unimportant article of poultry, the careful selection of kinds and feed make all the difference.

I remember calling on a friend last winter, and seeing him feeding his hens quite freely with corn; I asked him if it paid. He told me that he kept an exact account of his hens, and that they were paying him considerably over a dollar a bushel for his corn, besides the manure. His hens were averaging him over 20 eggs to the hen in February, and mine not 5,—and the difference was in the breed and feed.

Another great leak in farming is the want of plenty of fruit and a good vegetable garden. Most farmers are content so they have plenty of bread and meat—the two most costly articles of food that can be used. With a very little extra labor and manure, a well-kept vegetable garden of one acre can be made to produce more food than five acres in grain, as by judicious planting and forethought every inch of the land may be made to produce two crops of vegetables, and keep up a supply all the year round. These are some of the little losses too common with farmers, and especially in Maryland.

That our farmers are farming too large farms, spreading the manure that should only go on 10 acres on 20, keeping up miles of fences to keep out other people's cattle, letting their cattle range after their food, instead of soiling them and saving time in looking them up, and also their manure,—these things the *American Farmer* has been urging for 20 years; but still our farmers mend their old fences, and pasture what little life there is in the land out of it. We have plenty of examples to show that, by judicious farming and strict economy, our poor but naturally good lands can be renovated. I have in my mind now, a farm probably one of the richest and best-paying in the State, that has been brought from old sedge fields to produce from 15 to 20 bushels of corn to the acre, and of an adjoining one that has been so much improved in less than ten years, as hardly to be recognized by any one who had not seen it in that time. Yet lying all round these farms are others that have not increased in value a dollar; probably would bring less than they would 25 years ago. Now that the great railroads are putting so cheaply to the seaboard produce from the fertile West, it behooves our farmers to mend their farming so as to meet the times.

Yours, &c.,

Harford Co., Md., Dec. 26th, 1875.

McGinnis Harrow.

This implement, the invention of our friend Capt. L. H. McGinnis, himself a practical farmer, and an occasional contributor to our pages, promises to achieve a great success. We recommend all to send for one of his circulars.

The Agricultural College.

By many persons any further State aid to the present Agricultural College will be opposed as useless, even if a reform is brought about, unless removed from its present location. A gentleman in a Western county writes us: "It seems useless to endeavor to resuscitate it in its present location. The whole situation and surrounding atmosphere (moral, not physical) oppress it like a malaria. It has struggled so long for existence, and has attained such a dwarfed and sickly growth that, like an old but small and scarred tree in a neglected lawn, it must be pulled up by the roots, or continue to make feeble attempts at leaf and fruit, without perfecting either. Such an institution should be in the midst of a wide-awake, flourishing community; it must be under the control of men of the highest tone and character, and who can throw enthusiasm into their teachings, and show by precept and example that a certain amount of labor is not incompatible with culture."

Another, who at one time took an active interest in the present college, writes:

"There is one consideration which, it strikes me, ought to have very great weight and influence in shaping or continuing the educational system of Maryland, and that is the establishment and splendid endowment of the Johns Hopkins University by the late Mr. Hopkins. This is so much larger and richer than any other institution in the State, if not in the United States, that it appears to me useless and unwise to attempt to keep up anything like a rival institution to it in Maryland. True wisdom, it seems to me, would be to adopt it as the great leading institution for the State, and let all other inferior colleges and academies be shaped so as to further and feed it as preparatory adjuncts rather than as rival and independent institutions. Mr. Hopkins, I think, mentions agriculture as one branch to be taught in the university he founds; and I personally know it was one of the subjects he had much at heart."

In the *Port Tobacco Times*, of December 24, we find a letter from Mr. O. N. Bryan, a prominent and influential farmer of Charles county, on this subject, who, after showing what the college has cost the State, thus speaks of its present management:

"How a naval education and a naval life is to qualify a man to reflect credit upon an agricultural college I am at a loss to know. With all due deference to Capt. Parker as a man, I fear he would not know a tobacco plant from a mullein plant."

And epitomizes thus its work:

"Up to date, although many of its professors have been able men, they have not made one single original experiment upon farming, nor anything else; nor analyzed one pound of manure of any kind; nor turned the microscope upon anything that would for one moment advance the cause of agriculture."

His article, a lengthy one, concludes as follows:

"I have lately received a letter from a distinguished agriculturist and professor in the North,

in which he says: 'I know all about that institution and have for eight years. In fact, in 1865, I went to see the locality where the college was said to be, but did not see it. I fear I should not find an Agricultural College if I was there to-day. The fact is, my dear sir, intelligent practical farmers know a confounded sight more than they think, or than the literary or scientific (so-called) give them credit for, and no agricultural college can be permanently useful or exist unless this element is at the front or controls the helm. When I hear that the farmers of Maryland have taken the 'bull by the horns' and twisted his present head off, and have put in his place one that knows what farming is, what it needs, and is in complete sympathy with the farmer, there will be hope for the institution and the next generation of farmers if not for the present.'

Mr. Wells, this last clause falls upon my ears like a funeral dirge—'if not for the present.' That is to say, we of the present day are not to receive any benefit from our agricultural college after expending \$149,000 and waiting twenty-five years for the fulfilling of the promise noted above. What is then to be done with this abortion, called an agricultural college? I for one answer, abolish it as a college and erect upon its ruins an *Experimental Farm*."

Report of the President of the Agricultural College.

Since our article on page 27 was put in type, we have received a copy of a report, made under date of December 8 by Captain Parker, President of the College, to the trustees.

It states there are 47 students in attendance, divided into three classes, the *Freshman* "studying arithmetic, algebra, grammar, geography, spelling, writing, history of United States, natural philosophy, agricultural botany, elementary chemistry and Latin." There is a special class in practical agriculture, consisting of nine members. "When the spring opens all classes will be taken into the field and practical labor encouraged." Nothing is said about the boys preparing for the United States Naval and Military Academies. From the farm this year there is corn, rye, hay, straw and winter vegetables in great abundance, "with the exception of potatoes, which were destroyed by the bug."

The financial statement is not a very clear one. A committee certify that the "total debt" is \$9,109.40, but naively add in a note: "this is exclusive of the note for \$3,000 to be taken up in January," and the president says: "If nothing unfavorable occurs we can devote most, if not all, of the \$6,000 coming to us from the State in February, to the settlement of the old claims upon the College;" and, "as the \$3,000 due us in January was anticipated by the Board, it appears that we have devoted \$9,000 to the payment of old debts in the first session of my administration." These statements are elucidated by the following note: "The debt of the College, as shown by the paper marked C, is \$9,109.40. It must be borne in mind, however, that as we have a note in bank for \$3,000 [to be taken up with the \$3,000 due us in January] the debt of the College at the beginning of my administration was twelve thousand dollars."

The president submits an estimate of repairs and equipments needed, amounting to \$6,500,—\$3,000 for the College and \$3,500 for the farm,—and leaves it for the Trustees "to decide whether the next Legislature shall be asked for an additional appropriation or not!"

The Maryland State Grange.

This body held its annual meeting at Frederick on the 14th ultimo, continuing several days in session, with a good attendance. A large amount of business was brought up for consideration, amongst it the subject of transportation, the increase of vagrancy, the mismanagement of the State Agricultural College, the inspection of tobacco, &c. Some of these questions were referred to committees, and but little information has been given the press as to the action taken, except in the matter of tobacco inspections.

A committee of ten having been appointed to examine the subject in all its bearings, consisting of Messrs. F. M. Hall, (chairman,) S. A. Mudd, Thomas Owens, Hugh Mitchell, G. B. Perrie, Dr. G. W. Dorsey, George Thomas, Mr. Norris and Mr. Mitchell. This committee consulted with the one appointed by the meeting of the tobacco trade in Baltimore, and, after a full discussion, made the following

REPORT:

The Committee on the Tobacco Question beg leave to submit the following as the unanimous determination of the committee on this very important matter. From the best information within reach of the committee they are satisfied that enormous losses accrue to the planting interest by reason of the bad system of inspection now in operation within the State—losses amounting to the large sum of \$270,000 annually at the most moderate computation. The committee ask that the Legislature be memorialized to pass laws with such stringent provisions as may be necessary, embracing the following:

First. That two of the State tobacco warehouses be leased to private parties for inspection of tobacco at a maximum rate to be fixed by the Legislature.

Second. That in each of the State tobacco warehouses there be required to be a sample-room for the storage and safe-keeping of samples of tobacco, should the consignor desire them so to be kept.

Third. That any parties may be allowed to open warehouses for storage and inspection of tobacco under such rates of charges as such parties may make known by publication.

Fourth. That all tobacco inspected at the State tobacco warehouses shall be weighed before inspection, as well as after the inspection, so as to show the loss in handling the same,—such weights to be entered on the books of the warehouse, with the name of owner and consignee, if the tobacco be consigned.

Fifth. That tobacco notes or receipts be placed on an equal footing for commercial purposes with elevator receipts, such notes or receipts to imply title to the holder only in the event of such holder being the one in whose name the certificate is issued, or one to whom the note or certificate may be legally transferred, assigned or endorsed by such party, the notes being always re-

quired to be issued in the name of the grower.

Sixth. That the matter of false packing and manipulation of samples be provided against by laws attaching severe penalties for such offences.

Seventh. That there be dropped from the list of appointments of tobacco inspectors the inspector now called chief inspector or supervisor.

To these the committee added the following:

"It will be seen that the committee recommend no radical legislation on the subject of tobacco inspection and the evils arising from abuses of the same and incident thereto. It is claimed that one advantage would be that the two systems of public and private inspection, under the laws carrying out the sense of the resolutions herewith presented, would be put into practice side by side, the better system ultimately prevailing."

Maryland State Agricultural Society.

At the monthly meeting of the 2d ult. the road committee made a report, which was referred to a committee to frame a bill for the Legislature, with regard to the same, and Messrs. Ditty and Webster were appointed the committee.

A committee was appointed to confer with the Board of Trade on the subject of "protecting dealers and farmers from embezzlement." The nature of the proposed action is not given, and we were not present at the meeting. Mr. Davis was appointed chairman of the committee.

Prest. Davis submitted a resolution, that to encourage emigration and relieve the farming community from the unequal burden of taxation which now rests upon it, the Legislature of Maryland be petitioned to pass a law exempting all lands actually in cultivation from the burden of taxation.

The resolution was adopted, and the president was requested to prepare the petition and present the same to the Legislature.

[The taxes from licenses and incidental sources would be amply sufficient, we believe, for economically carrying on the State government, and thus render practicable the abolition of the direct tax upon real estate altogether, if all unnecessary and wasteful drains from the Treasury were cut off, but exemption in the shape named would neither be popular nor likely to be secured.]

At a meeting of the executive committee of the association, held December 22d, the president was authorized to renew the sub-lease to the Maryland Jockey Club of the grounds at Pimlico for 1876, and the following resolution was also passed on the above subject:

Resolved. That the Executive Committee do not endorse the action of the last monthly meeting of this association in favor of the exemption of land in cultivation from taxation, but in lieu thereof express their decided opinion in favor of a just and equal tax on all and every description of property in the State.

[The executive committee of such associations is generally presumed to be subordinate to the body itself, but this one seems, from its action, to reverse the rule.]

Sketches of Travel.

BY JANE BOSWELL MOORE BRISTOL.

Philadelphia has nearly twice as many houses as New York, and its park is three times the size of Central Park, with greater natural beauty. Its public cemeteries (Laurel Hill, Woodland and Mt. Vernon) are far more attractive than Greenwood, with finer monuments.

Every stranger should go to old Christ Church and its grave-yard,—the quaint inscriptions on the weather-beaten stones well repay careful reading, and the Burd family monument in St. Stephen's Church is exceedingly beautiful.

In Laurel Hill, half-hidden by wild evergreens, is the ponderous iron door of a rocky tomb, the key of which closed on the resolute Arctic Voyager, Elisha Kent Kane. Under a tall monument sleep those who, in noble devotion, went forth to the relief of the Norfolk sufferers, at the sacrifice of their lives. The mausoleum or vault of the Drexel family is in the form of a temple; the railing round the lot, steps, portico, and the whole structure, being of the purest white marble.

In the midst of the attractions of Chestnut street rises the great treasure-house of the Sunday School Union, its gems more enduring than ruby or diamond. Who can forget the pleasure felt years ago, in reading those little volumes in red, blue, purple and green, with their simple but eloquent illustrations? It brings back one's early days, to look over familiar names and titles, which are still doing good, and giving pleasure to tens of thousands. The benevolent face of Thomas Cooke Paul beams upon us once again, from the opening page of the memorial of his life, fragrant with noble deeds. We loved him in our childhood, and our interest in this small volume had not abated when, years after, riding through the cemetery of Petersburg, Va., we read his dying words and name on a marble shaft, standing by his grave, an hour after passing the orphan asylum founded by his dying bequest. To such books, how many minds owe their dawning impressions for good. What delight there was in our class, when the whisper went round that the library had been enriched by new books.

Such practical tales as "Jane Hudson; or, the Secret of Getting On in the World," "Robert Dawson, or The Brave Spirit," "Hugh Fisher, or Home Principles Carried Out," "Reuben Kent's First Winter in the City," "Grace McDermott," "Alice and Bessie," "Frank Netherton," and "Daisy Dingle Sabbath-School," with their strong pervading religious influence, had not a little to do in moulding some lives, which, in after years, were given to the relief of suffering humanity. It is not for those whose tables and shelves are covered with costly tomes to know the delight with which these messengers will be received in humble homes. And the influence of a good book is so eloquent, so powerful.

Philadelphia is the home of many distinguished artists. On the walls of the Academy, we first saw V. de V. Bonfield's well-known snow scenes, with "Winter Moonlight," which had for us a strange fascination. Through a mass of strug-

gling, half-parted clouds, moonlight breaks on the snowy roof of a low cottage, from whose solitary window a cheery light shines, while the old tree on the right stretches its bare branches over it as a shield, at the same time interposing a single branch between you and the moon. One cannot but wonder who are the dwellers within, and try to picture the now desolate tree, as it will be when clothed in spring leaves, green and beautiful. On a smaller canvas, the sun has gone down clearly, after a day of snow. The storm has disappeared. All is now still and clear, and the sun's last rays fall on the village church, tower, and cross, around which, as a poetic breathing of peace after storm, birds are flying.

During our stay, a friend took us to see a young woman of much intelligence, who, for fourteen years, has been unable to turn on her left side or back, even for a few minutes. Confined all this time to her bed, in a little back room in one of the small streets of the city, her sufferings are often intense; her cure past hope. She spoke, with pleasure, of a copy of Mr. Talmage's paper entitled *Christian at Work*, which some one had sent to her, and of the delight she took in the sermons and other reading matter,—of some flowers on the sill, and two young friends from Mr. Wanamaker's mission church, who came and sang for her. What an amount of hidden suffering there is in the world, and what a stormy passage is life to many tried souls!

As we walked up Chestnut street to Mr. Marey's, looking with gathered friends, for an hour, through his wonderful sciopticon, at changing views, portraits, landscapes and statuary, marvelling at the fidelity with which, by this simple instrument, scenes in the Holy Land, Egypt, Greece, Rome, India, China, Turkey, Germany, Switzerland and the Tyrol, England, Scotland, Ireland, France and Spain, are brought before us, with the different characteristics of each, (the mere list of these and other views filling a volume) our thoughts went back, amid our enjoyment of these admirable representations, to that life-long prisoner who contends with poverty as well as disease.

Can anything in this life compensate her? Do not these wrecked and broken lives point to another, in which the tangled skein of this may be unravelled;—the imperfect column finished;—the crested wave or stormy breaker that appeared for a moment, and then vanished here,—there expand into a broad and fathomless sea? Narrow, indeed, is any view of life that is bounded by death.

Taking passage on the "Whilldin," one of the Ericson steamers, we leave the busy wharf, pass the little light-house set in the waves, in which its ruddy light is reflected, and Chesapeake City, with its blazing lights. Not a few of the passengers have been in search of health, and while some wrap shawls round them more closely, and draw forth such volumes as "Green Gate" and "Abbe Tigrane," others talk over life experiences and those of the summer. Wakening next morning, in a spacious state-room, we look on the broad Chesapeake, Fort Carroll, the Lazaretto, the low shore and trees round Fort McHenry, the huge grain elevators, the largest in the world, and lastly—Baltimore. As we pass again the church-yard round Westminster, we

note the grave of Edgar Poe, about whose monument we heard much while absent. A walk among immense blocks of marble "in the rough," in the works of Hugh Sisson, is suggestive. What varied and mighty agencies are required to bring it to perfection! Quarrying and transporting thither, from Egypt, Spain, Belgium, Carrara, Sienna, Broccadillo, Connemara, Tennessee, Vermont, Lake Champlain, etc., are but first steps; the crane is the giant lever which raises twenty tons at once; not less potent in its way is the engine of sixty-horse power, by which the saws are worked. Six of these cut into an huge block, slicing in into required thinness. They look slight for the work before them, but constant friction does a great deal. Rubbing-wheels and polishing machines come next, chisel and hammer carrying out the ideal of the artist. We see it in the medallion likeness of Poe, which is exquisitely finished; the forehead lofty and intellectual, the eyes full of poetry and imagination, the mouth fatally weak and irresolute, as Poe was in character. The picture of his last days is full of warning. With all his brilliant endowments, did he leave the world wiser and better? In humble graves, but a few feet removed, sleep those who will be remembered and honored when Poe, with his rich mental gifts, is forgotten. Sternly repressing *self-indulgence*, they *lived for others*—moulding younger lives by example and precept, opening channels of influence and usefulness, which widen and deepen as they flow.

Baltimore Markets—December 30.

The quotations below are Wholesale Prices.

Breadstuffs.—Flour—Heaviness characterizes the market at the closing of the business of the year. We quote nominally Howard St. Super \$4@4.50; common to fair Extra \$4.75@5; good to choice \$5.25@5.37; Family \$5.75@6.15; fancy Family \$7@8.25; Ohio and Indiana Super \$4@4.37; do. Extra \$4.50@5; do. Family \$5.25@6.50; Northwestern Spring Extra \$5.25@5.35; City Mills Super \$4.25@4.50; do. Standard Extra \$5.75@6.25; do. Rio brands Extra \$6.75@7; Patapsco Family \$8.75; do. Extra and other brands \$8.25@8.75. Rye Flour \$5@5.25; Corn Meal city \$2@3.25; do. Western \$3.

Wheat.—Southern red, good to prime, 125@145 cents; amber 147@150 cents, the latter for fancy lots; do. white 120@145 cents; Penna. 138@139 cents; Western No. 2 red, 132@133 cents. Buckwheat Meal, Pa. and Md., 7 1/2@10 lbs., \$2@3.25, and N. Y. State \$2.50@2.75.

Corn.—Southern yellow, new, 54@61 cents; do. new white 50@55 cents; Western steamer 55 1/2@56 cents; do. mixed new 53 cents.

Oats.—Very dull. Southern 45@50 cents; Western nominal at 40@43 cents for mixed, and 44@45 cents for bright.

Rye.—Good to prime Southern 80@85 cents; inferior 75@77 cents.

Cotton.—Receipts at all ports to-day 30,242 bales, against 17,686 bales same day last year. Stock at all ports 794,326 bales, against 833,135 bales last year. The market has been quiet but steady for the better grades, but low grades are very dull. Good Middling 18 cents; Middling 12 1/2@12 3/4 cents; Low Middling 12 1/2@12 3/4 cts.; Good Ordinary 11 1/2@12 cents.

Hay and Straw.—Market quiet. Cecil Co. (Md.) Timothy \$34@35; Pa. and N. Y., \$22@24; Western \$19@21; Mixed \$18@20; Clover \$18@19. Straw, \$13 for Wheat; \$15 @16 for Oat, and \$20 for Rye.

Mill Feed.—City Mills Middling and Brownstuff \$50; Western Bran \$15@17; and Shipstuff \$18; City Mills Brownstuff by the bushel, 30 cents; common Middling \$30@32 cents; extra do. \$32@30 cents.

Salts.—Liverpool ground Alum \$1.15@1.25; do. fine standard \$2.10@2.15; and for Ashton's standard 7 sack \$2.90@3; and 35 cents 7 bushel for Turks Island.

Seeds.—Cloversseed firm at 11 1/2@12 1/2 cents, and receipts light; Flaxseed \$1.50@1.60 7 bushel.

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NEW ADVERTISEMENTS.

R. W. L. Rasin & Co.—Fertilizers.
 Slingshuff & Co.—Fertilizers and Materials.
 B. J. Baker & Co.—Bones and Fertilizers.
 J. M. Rhodes & Co.—Standard Manures.
 Dr. A. Dreyer—Farm and Stock for Sale.
 T. J. Taylor—Jerseys for Sale.
 C. E. Coffin—Berkshires for Sale.
 J. A. Foote—The 100 Days Tomato.
 J. M. Thornburn & Co.—Seeds and Bulbs.
 J. E. Root—All about Gardening.
 J. B. Root—Good Seeds.
 Briggs Bros.—Floral Work.
 Jas. Vick—Floral Guide.

Starting Onions in Hot-Beds.

Root's *Garden Manual*, elsewhere noticed in this issue, says: "Some seasons sets are very high, and are always somewhat risky of storage." For my own use, I have found a profit in starting onions in the hot-bed, thus getting green sets at small expense, instead of ripe ones, and avoiding the trouble of keeping over. Sow these seed thickly on a mild hot-bed, early in March, in rows about an inch apart, and about the middle of April transplant into the open garden. The transplanting is but little more work than putting out sets, and either is less work than the first weeding of an ordinary bed, which this plan renders unnecessary. Transplanted in this way, there is a certainty of a stand (which alone is worth the whole cost,) and the crop pays at least double that raised from seed in the open air. A bed 6x12 feet raises sets enough for one-seventh of an acre.

GOOD SEEDS

GROWN with care and painstaking, from selected stocks. ALWAYS PAY! Try mine. See advertisement "All About Gardening." J. B. ROOT, Seed Grower, Rockford, Ill.

FARM FOR SALE.

I will sell for \$3,000 cash, my farm of Sherwood on the Severn river, two and a half miles from Annapolis, Md., containing 179 acres, with good buildings—built in 1868—in thorough repair. Also my Horses, Sheep, (Leicesters imported from Canada) Swine, (Berkshires from imported stock) Light Brahma Poultry, pure breed Pea Fowls, &c., &c., and all my Farm Implements, one season in use only. There is a nice Peach Orchard in full bearing; Apple Orchard; large Vineyard, 34 acres; a large Oyster Bed; good fishing and shooting. There is about 80 acres cleared, balance in original timber, consisting of Chestnut, Poplar, Black Walnut, Oak and Hickory. Place perfectly healthy; water excellent and never falling. Title perfect; possession immediate, as the proprietor is leaving the country. Address

DR. A. DREYER,
 Annapolis, Md.

JERSEYS FOR SALE

Three heifers, lately fresh; two in calf, and two heifer calves. All thoroughbred and from good butter stock. Two took prizes at last Maryland Agricultural Show. Will be sold a bargain. Apply to

T. J. TAYLOR,
 Catonsville, Md.
 OR TO THE EDITORS OF THE AMERICAN FARMER.

